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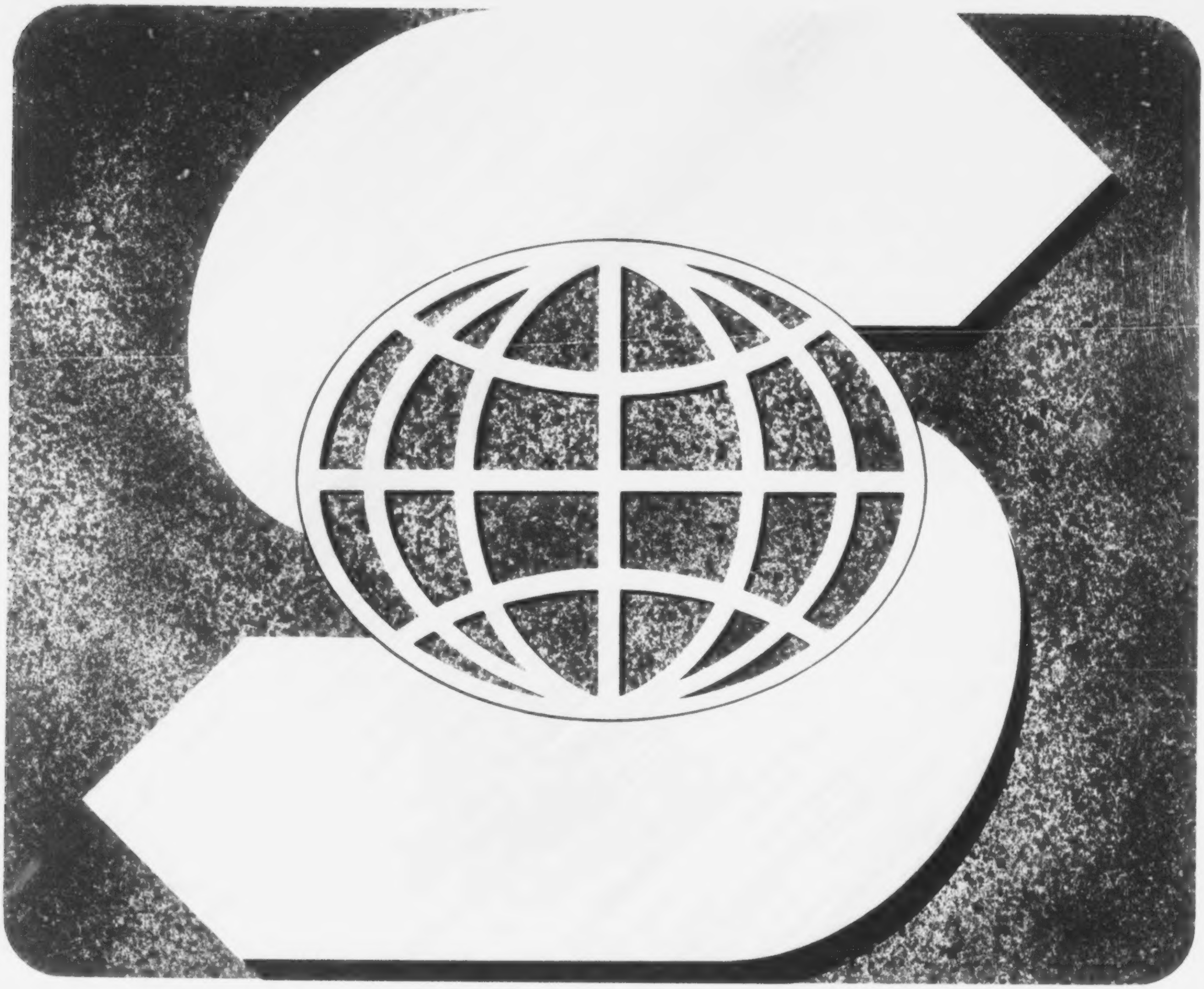

Aluminum Mill Products:
Import Problem/Export Potential

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ALUMINUM MILL PRODUCTS:
IMPORT PROBLEM/EXPORT POTENTIAL

Prepared by the
Nonferrous Metals Division
Office of Metals, Minerals and Commodities
Basic Industries Sector

U.S. DEPARTMENT OF COMMERCE
International Trade Administration

July 1986

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SUMMARY AND POLICY CONSIDERATIONS

I. Summary

- The U.S. aluminum mill product industry is a modern and efficient producer of high quality products. However, it is finding it extremely difficult to compete against foreign producers aided by subsidized investments and foreign trade policies designed to limit market access by U.S. and other aluminum mill products producers.

- The United States has historically been a net exporter of aluminum mill products, but since 1983 has became a net importer. Imports are now supplanting U.S. production in meeting U.S. market demand.

- The annual average rate of growth in aluminum mill product imports between 1976 and 1985 was 38.3 percent, compared with 2.3 percent for U.S. producers' domestic shipments during the same period. Double-digit import to consumption ratios, once rare occurrences, now characterize the U.S. sheet, plate, and rod and bar markets.

- As the world's largest market for aluminum mill products, the United States provides foreign producers relatively free access to its market. U.S. rates of duty are negligible when compared with those of its trading partners, who now enjoy a growing presence in the U.S. market. Tariff rates on selected aluminum mill products are listed in table I.

- Access to the U.S. market is also facilitated by the Generalized System of Preferences (GSP) and TSUSA No. 806.30, which further reduce duties.

- In addition to tariff barriers, many of the major U.S. trading partners have a number of nontariff barriers in place to protect their domestic industries. In some cases, these nontariff barriers render the tariff rates meaningless by prohibiting certain products from entering the country at any rate.

- The governments of some countries offer export subsidies which serve to give their domestic producers an advantage in the international market.

- A portion of world production capacity has been and continues to be influenced by nonmarket factors such as the desire to maintain high levels of employment and other social goals and the need to obtain foreign exchange. In addition, these same factors contribute to the expansion or establishment of additional capacity.

TABLE I
ALUMINUM MILL PRODUCT
TARIFF RATES, BY COUNTRY

Country	Product Duty Rate	Product Duty Rate	Product Duty Rate	Product Duty Rate
	Sheet, Plate	Rod, bar wire	Foil	Pipe, tube
U.S. 1/	2.7-6.5%	2.6-5%	5.3%	1.5-5.7%
Argentina	38%	38%	38%	38%
Australia	5%	15%	20%	15%
Brazil	45%	45%	45%	10%
Canada 1/	2/ 2.1-8%	2.1-8%	9.2%	8%
EEC 1/ 3/	10%	7-10%	10%	7-10%
Japan 1/	11.5%	11.5-12.8%	12.8%	5.8-12.8%
Mexico	40%	40%	40.8%	40%
New Zealand	35%	35%	30%	35%
Norway 1/ 3/	0.0-9%	0.0-5.8%	4/	5.8-6.2%
PRC	20%	20%	25%	20%
Venezuela	60%	60%	70%	70%

1/ As of January 1, 1987
2/ Canada has a seperate rate of 8% for can end stock.
3/ EEC and EFTA shipments are duty-free for all products.
4/ Norway's rate for foil ranges from NOK 1.88 per kilogram to NOK 0.75 per kilogram.

- The most notable nontariff barriers and export subsidies are listed below:

Import Licenses

Argentina, Brazil, and Venezuela require importers to obtain licenses for all or certain products. Often, the importer is not granted a license except under exceptional circumstances.

Special Taxes on Imports

Argentina, Brazil and the European Economic Community levy special taxes or fees on imports of aluminum mill products.

"Buy Domestic" Policies

Australia, Brazil, and Japan either explicitly or implicitly have policies that promote the purchase of domestic products, when available, over imports of similar products.

Export Subsidies

Brazil, New Zealand, the People's Republic of China and Venezuela provide a variety of incentives for encouraging the export of aluminum mill products. These include low tariffs on imports of raw materials used in the production of items for export, tax exemptions for exported products, and outright grants paid by the government to exporters.

II. POLICY CONSIDERATIONS

The U.S. aluminum mill product industry is a modern and efficient producer of high quality products, equal to or surpassing the industry of any other nation. However, the U.S. industry is losing market share domestically to low price imports, and is being excluded from many foreign markets by means of tariff and nontariff barriers. A continuation of this trend could result in the deterioration of the financial condition of some mill products producers. Although the increase in imports may be partially attributed to a strong dollar, as could low export levels, any attempt to prevent further erosion of the net balance of trade in aluminum mill product , or reverse the present trend, must focus on the liberal trade policies of the United States and the restrictive policies of foreign governments.

The 30 percent decline in the value of the dollar since September 1985 will have a positive, but likely minimal, effect on the net trade balance. The reason the effect would be minimal is that foreign mill product capacity is already in place, much of which is targeted toward, and dependent on the U.S. market. Additionally, the government ownership of many foreign plants often means that production levels are chosen in those countries for domestic social and political reasons, as well as to earn needed foreign exchange.

The question that policymakers should address in regard to this situation is whether it is equitable to allow the deterioration of the U.S. aluminum industry due to policies of the United States and of foreign governments. If the aluminum mill product industry is to be remain as a modern and efficient industry in a free trade environment, action should be taken to neutralize the international distortions which are affecting the ability of this industry to compete.

Based upon the foregoing we offer the following considerations:

1. Many of the countries possessing a developed aluminum mill product industry maintain protective trade policies which they no longer need. To continue these barriers beyond the industrial development of an industry serves only to foster inefficiencies in a noncompetitive environment within the subject country.

The U.S. Government follows a policy of attempting to liberalize world trade through international negotiations. Increased access to the U.S. market has been granted to many nations as an inducement for those countries to liberalize access to their markets. As a result, U.S. tariff barriers for aluminum mill products are extremely low compared with those of many other countries.

2. TSUSA 806.30 allows countries purchasing aluminum products from the United States (usually primary aluminum) and further processing the aluminum into an advanced product (usually aluminum sheet and plate) to export it to the United States under a reduced rate of duty. TSUSA 806.30 has traditionally been used by advanced industrial countries with modern aluminum mill product industries.

In the last decade, TSUSA 806.30 imports' share of total aluminum mill products has risen from 7.7 percent in 1976 to 25 percent in 1985. Japan's share of TSUSA 806.30 imports has risen from 18 percent in 1978 to 82 percent in 1985, while the amount of total TSUSA imports has increased from 19,000 MT to 116,000 MT during the same period. Japan's TSUSA 806.30 shipments represented 65 percent of its total aluminum mill product exports to the United States in 1985. At the same time, U.S. aluminum mill product producers' access to the Japanese market was limited by high tariff rates and nontariff barriers.

3. The U.S. has long offered Generalized System of Preferences (GSP) privileges to Less Developed Countries (LDCs) to aid in the developmnet of their emerging industries. The qualifications for maintaining GSP status for aluminum mill products should be made more stringent. Many of the countries benefitting from GSP have been those with modern and efficient aluminum mill products industries.

Since GSP's inception in 1976, the number of countries using it has increased from 7 to 26 in 1985, while GSP's percentage of total aluminum mill product imports has risen to 18 percent. Many of the countries benefitting from GSP have been those with mature aluminum mill product industries. In 1984 Venezuela, which has a world class aluminum mill product industry, became the largest GSP source and in 1985 supplied 61 percent of all GSP imports.

4. The liberal loan policies of international financial institutions toward LDCs seeking to build up their aluminum mill products industries has contributed to the supply/demand imbalance for aluminum mill products. It should be the policy of the United States not to encourage such loans.

In most cases, the domestic market of an LDC will not justify investment in high volume, world scale aluminum mill products plants. However, LDCs which have developed an internationally competitive primary aluminum industry are increasingly adopting strategies to develop the capacity to produce aluminum mill products for export, with special emphasis on the U.S. market.

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I. Introduction

The U.S. aluminum industry is highly integrated and relatively concentrated. The major U.S. aluminum companies own mining, refining, smelting, and fabricating facilities throughout the world. Bauxite is mined primarily in Australia, Guinea, Jamaica, Brazil, the U.S.S.R., Suriname, and Yugoslavia. Those countries in which bauxite is refined to alumina include Australia, the United States, the U.S.S.R., Jamaica, the Federal Republic of Germany, Japan, Suriname, Venezuela, and Canada. Alumina is smelted to produce aluminum ingot primarily in the United States, the U.S.S.R., Canada, Norway, Australia, and the Federal Republic of Germany. Mill products, such as sheet, plate, wire, and pipe, are fabricated from aluminum ingot primarily in the United States, Japan, the Federal Republic of Germany, the United Kingdom, Australia, France, Italy, Belgium, and Venezuela.

Historically, the United States has accounted for the largest share of world aluminum ingot and aluminum mill products production. Because aluminum smelting is very energy intensive (energy accounts for one-third of the smelting cost) production of aluminum ingot has tended to move to countries with low energy costs, such as Canada, Australia and Brazil. Thus, since the oil "crises" of the 1970s, aluminum ingot production has shifted markedly from the United States and Japan to these other countries. The U.S. producers' response to this shift has been to emphasize the mill products sector of the industry. This has been the case both in the United States and in Japan, where the government has effectively eliminated the aluminum smelting sector.

Since the United States is the world's largest consumer of aluminum mill products, the competition centers around the U.S. market. Consumption of aluminum mill products in the United States has increased from 4.3 million metric tons (MT) in 1976 to 5.6 million MT in 1985, for an average annual increase of 3.3 percent. During this time, U.S. producers shipments increased from 4.5 million MT to 5.3 million MT, an average annual increase of only 2.3 percent. Imports, particularly from Japan, have filled the gap. From 1976 to 1985, imports increased from 85,700 MT to 463,000 MT at an average annual rate of 38.3 percent (see table 1). While foreign mill product producers have jockeyed for larger shares of the U.S. market, U.S. producers have invested millions of dollars in modernization and streamlining to remain competitive. Despite these efforts, a portion of U.S. aluminum mill products capacity was idle in 1985.

1/ For a comprehensive examination of U.S. energy policy and its effect on the U.S. primary aluminum industry refer to: James S. Kennedy. Energy and the Primary Aluminum Industry. International Trade Administration, U.S. Department of Commerce: January 1985.

Although exchange rate fluctuations have been a factor in shaping the trends, this situation has to some extent been the result of trade policies both of the United States and of foreign governments. While foreign governments have protected their industries with various tariff and non-tariff barriers, the U.S. has pursued a policy of free trade and open markets. As a result, U.S. producers of aluminum mill products are now seeing their investments threatened by the trade policies of their own and other governments.

This report reviews the trends in U.S. imports of aluminum mill products during the period 1976 to 1985 and describes the structure and current status of the domestic industry producing these products. It also reviews the aluminum mill products industries of other major producers, with data on imports from and exports to the United States. The report outlines trade policies of the United States and of their major trading partners in aluminum mill products and attempts to determine the effects of these policies on world trade in these products.

TABLE 1
ALUMINUM MILL PRODUCTS:
U.S. APPARENT CONSUMPTION, PRODUCERS SHIPMENTS, AND IMPORTS, BY PRODUCT
(Metric Tons)

Product/Item	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Sheet:										
Shipments	2,490,356	2,684,568	2,948,381	2,858,568	2,567,359	2,676,222	2,481,629	2,993,287	3,085,821	2,959,148
Consumption	2,411,620	2,595,607	3,021,914	2,844,023	2,451,276	2,615,989	2,529,041	3,091,045	3,294,158	3,146,495
Imports	67,332	57,550	193,736	156,308	55,202	107,477	181,858	232,167	377,854	324,618
Plate:										
Shipments	103,765	111,587	127,007	141,069	143,790	128,368	97,997	96,616	129,729	123,298
Consumption	95,200	102,824	119,211	134,194	123,941	114,000	92,299	97,467	139,801	135,887
Imports	964	817	2,981	5,755	2,004	4,625	6,331	10,998	23,351	24,693
Foil:										
Shipments	355,620	370,135	404,330	410,505	381,022	391,908	340,651	388,279	406,877	366,823
Consumption	354,141	368,638	411,661	409,307	367,953	388,321	343,552	396,573	425,968	387,283
Imports	4,986	4,428	9,730	8,131	4,127	6,092	8,767	13,262	24,497	25,935
Rod and Bar:										
Shipments	116,017	108,863	176,499	182,800	226,799	175,742	129,275	136,986	150,140	163,120
Consumption	100,592	104,650	159,421	172,117	172,189	144,796	110,259	138,379	177,418	211,133
Imports	9,483	8,231	10,039	17,218	7,413	15,531	4,562	12,449	37,317	58,379
Wire and Cable:										
Shipments	322,054	371,042	409,598	428,196	379,661	350,360	306,179	341,559	371,950	419,453
Consumption	303,268	339,556	375,075	403,847	341,389	308,743	281,031	324,617	381,223	424,416
Imports	2,077	1,798	1,777	3,197	1,087	1,464	1,498	3,840	14,653	11,601
Pipe and Tube:										
Shipments	173,274	182,800	178,717	154,594	144,697	143,790	95,709	118,389	136,533	113,769
Consumption	164,730	173,439	170,440	143,754	137,522	137,417	90,322	115,527	135,868	112,405
Imports	417	332	394	498	309	529	580	1,438	4,074	3,348
Total, All Mill Products:										
Shipments	4,483,807	4,807,221	5,331,126	5,252,653	4,820,376	4,798,149	4,270,616	5,038,556	5,395,[illegible]	5,323,999
Consumption	4,335,576	4,647,616	5,326,730	5,164,072	4,550,307	4,626,793	4,253,939	5,116,886	5,661,634	5,588,052
Imports	85,730	74,741	219,760	193,386	76,239	137,852	206,647	280,480	494,292	462,972

Source: The Aluminum Association; 1985 shipments from the U.S. Department of Commerce.

PART 1.
THE UNITED STATES INDUSTRY

I. U.S. Trade Policy and Imports of Aluminum Mill Products

U.S. duty rates for aluminum mill products are low compared with those levied by most other countries. Furthermore, a large share of the aluminum mill products destined for the United States come in under reduced or free duties. In 1985, 44 percent of all U.S. aluminum mill product imports came in under either TSUSA 806.30 (Tariff Schedules of the United States, Annotated) or the Generalized System of Preferences (GSP).

A. Imports under TSUSA 806.30

Imports qualifying for TSUSA 806.30 are articles of metal manufactured in the United States that are exported to be advanced in value or improved in condition by any process of manufacture and returned to the United States for further processing. The duty on these imports is levied only on the value of the processing done outside of the United States. In 1985, such imports accounted for one quarter of all U.S. aluminum mill product imports, with 82 percent of these coming from Japan. TSUSA 806.30 allows Japan to purchase primary aluminum ingot from the U.S. and then ship a further processed product (mostly aluminum sheet) back to the United States at a reduced tariff.

Since 1976, TSUSA 806.30 imports have increased from 6,600 MT (7.7% of total aluminum mill product imports) to 97,000 MT (25.1% of total imports). The amount and source of these imports between 1976 and 1985 are shown in table 2.

B. Imports Under the Generalized System of Preferences

Since 1976 (the year that GSP went into effect), imports of all aluminum mill products have been eligible for duty-free treatment to qualifying countries. A country that benefits from a market economy and is deemed a developing nation may qualify for GSP. Since its inception, the number of countries exporting aluminum under GSP has increased from 7 in 1976 to 26 in 1985, while GSP's percentage of total aluminum mill products imports has risen from 13 percent to 18 percent. Although the objective of the GSP is to aid developing nations, countries benefitting most from GSP since 1976 have been those with modern aluminum mill products industries that for the the most part are fully or partially state owned. In 1984, Venezuela became the largest GSP source, and in 1985 Venezuela supplied more than one-half of all GSP imports. The amount of GSP imports between 1976 and 1985 and the major sources are shown in table 3.

TABLE 2
U.S. TSUSA 806.30 ALUMINUM MILL PRODUCT IMPORTS, 1976-1985

Year	Quantity (Metric Tons)	806.30 % of Total Imports	Source (% of 806.30 imports)
1976	6,622	7.7%	France (64%), FRG (16%), Switzerland (10%)
1977	7,797	10.4%	Canada (43%), France (42%), Switzerland (10%)
1978	19,436	8.8%	France (43%), Canada (27%), Japan (18%)
1979	17,596	9.0%	Canada (36%), Japan (35%), FRG (16%)
1980	7,559	9.9%	Canada (52%), FRG (15%), Japan (14%)
1981	23,825	17.2%	Japan (40%), Canada (36%), Italy (14%)
1982	70,338	34.0%	Japan (76%), Canada (19%), Italy (3%)
1983	74,640	26.6%	Japan (70%), Canada (23%), FRG (3%)
1984	111,765	22.6%	Japan (71%), Canada (27%), Italy (1%)
1985	116,384	25.1%	Japan (82%), Canada (17%)

Source: The Aluminum Association

TABLE 3
U.S. GSP ALUMINUM MILL PRODUCT IMPORTS, 1976-1985

Year	Quantity (Metric Tons)	GSP's % of Total Imports	Source (% of GSP Imports)
1976	11,420	13.3%	Yugoslavia (81%), Romania (8%), Hong Kong (7%)
1977	9,113	12.1%	Yugoslavia (76%), Hong Kong (9%), Romania (7%)
1978	23,466	10.6%	Yugoslavia (56%, Romania (24%), Hong Kong (6%)
1979	23,722	12.2%	Yugoslavia (41%), Romania (29%), Hong Kong (9%)
1980	7,469	9.7%	Yugoslavia (62%), Hong Kong (13%), Romania (10%)
1981	24,130	17.5%	Venezuela (41%), Yugoslavia (29%), Romania (11%)
1982	15,340	7.4%	Yugoslavia (39%), Argentina (25%), Venezuela (11%)
1983	34,224	12.2%	Romania (32%), Venezuela (20%), Yugoslavia (19%)
1984	92,435	18.7%	Venezuela (38%), Brazil (22%), Yugoslavia (10%), Romania (10%)
1985	84,184	18.1%	Venezuela (61%), Brazil (9%), Yugoslavia (9%), Argentina (5%)

Source: The Aluminum Association

II. U.S. Aluminum Mill Product Imports and Apparent Consumption

The United States recognizes the importance of international trade to its economic well being. As a result, the U.S. permits foreign producers relatively free entry into the world's largest consuming market. U.S. producers, however, lack the same ability to enter many foreign markets because of both tariff and nontariff barriers. The United States has traditionally been a net exporter of aluminum mill products. Since 1983, however, the United States has become a net importer, with these products now entering the United States from a wide variety of countries.

Aluminum mill product imports have increased dramatically since 1982. Between 1982 and 1984 imports increased 139 percent (from 207,000 MT to 494,000 MT). Imports dropped slightly to 463,000 MT in 1985. The average annual rate of increase between 1976 and 1985 was 38.3 percent. In 1985 aluminum sheet and plate accounted for 75 percent of all aluminum mill product imports, while rod and bar made up 12 percent, foil 6 percent, wire and cable 3 percent, pipe and tube 1 percent. Graph 1 demonstrates how this product mix of imports has changed since 1976.

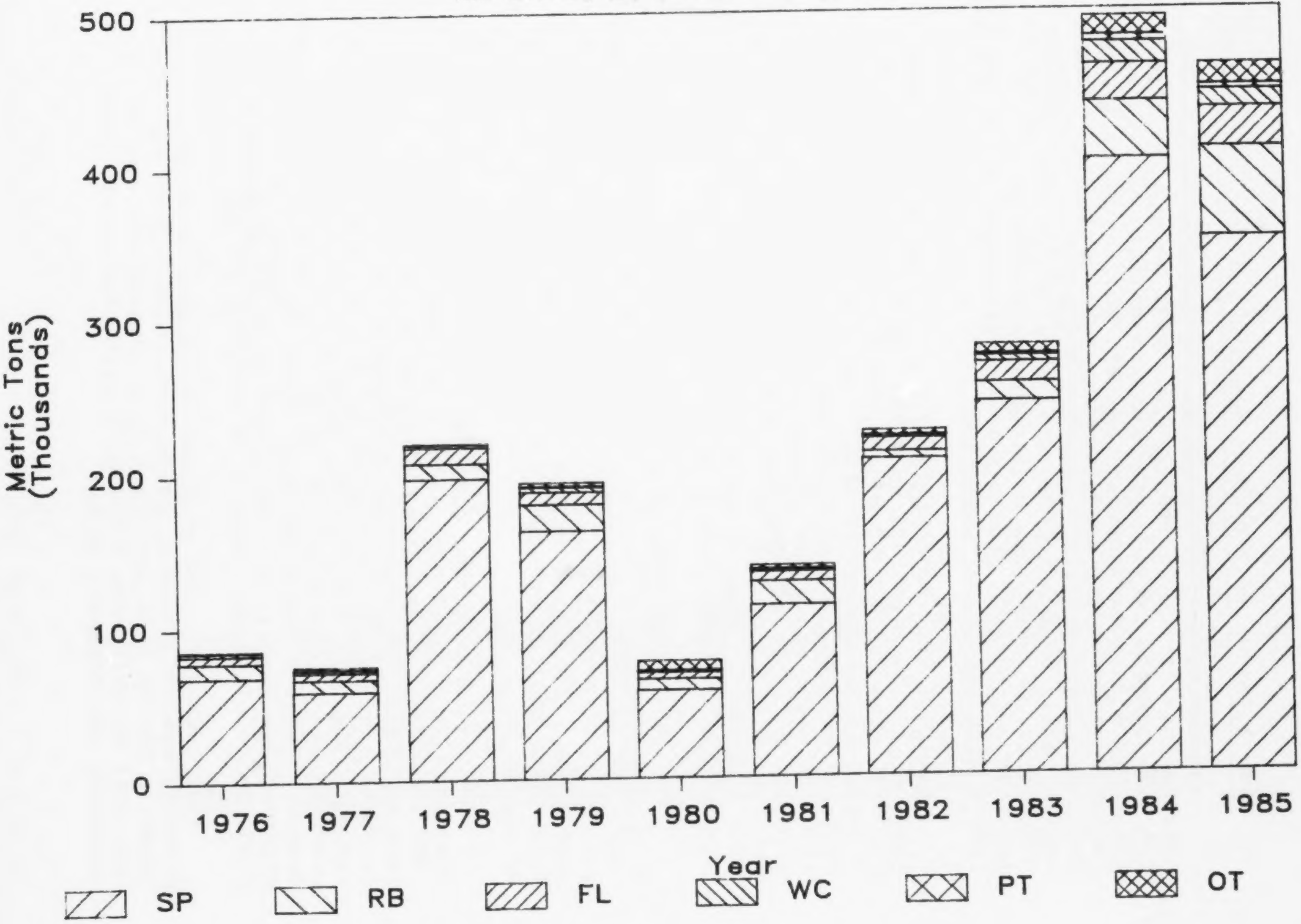
In 1985, 77 percent of all aluminum mill product imports came from: Japan (32 percent); the European Economic Community (EEC) (26 percent); Venezuela (12 percent) and Canada (7 percent), with the remaining 23 percent coming from 67 other countries. The annual change in aluminum mill product imports from these sources between 1976 and 1985 is shown in table 4 and graph 2.

As the table shows, aluminum mill product imports have increased at a rapid pace since 1980, setting records in both 1983 and 1984 but declining slightly in 1985. As a result, in 1984 and 1985, the import to consumption ratio of aluminum mill products reached historic highs of 8.7 percent and 8.3 percent, respectively. In other words, imports of aluminum mill products are supplanting U.S. production in meeting U.S. market demand. Table 5 shows how this rapid increase of imports has affected the import to consumption ratio of aluminum mill products despite the increase of domestic shipments.

The reason for the increase in imports of aluminum mill products was not the U.S. producers' inability to meet domestic demand. During this period, U.S. producers operated at less than full capacity and would have been capable of fully supplying the domestic market.

U.S. ALUMINUM MILL PRODUCTS

IMPORTS, BY PRODUCT (GRAPH 1)



U.S. ALUMINUM MILL PRODUCTS

IMPORTS, BY SOURCE (GRAPH 2)

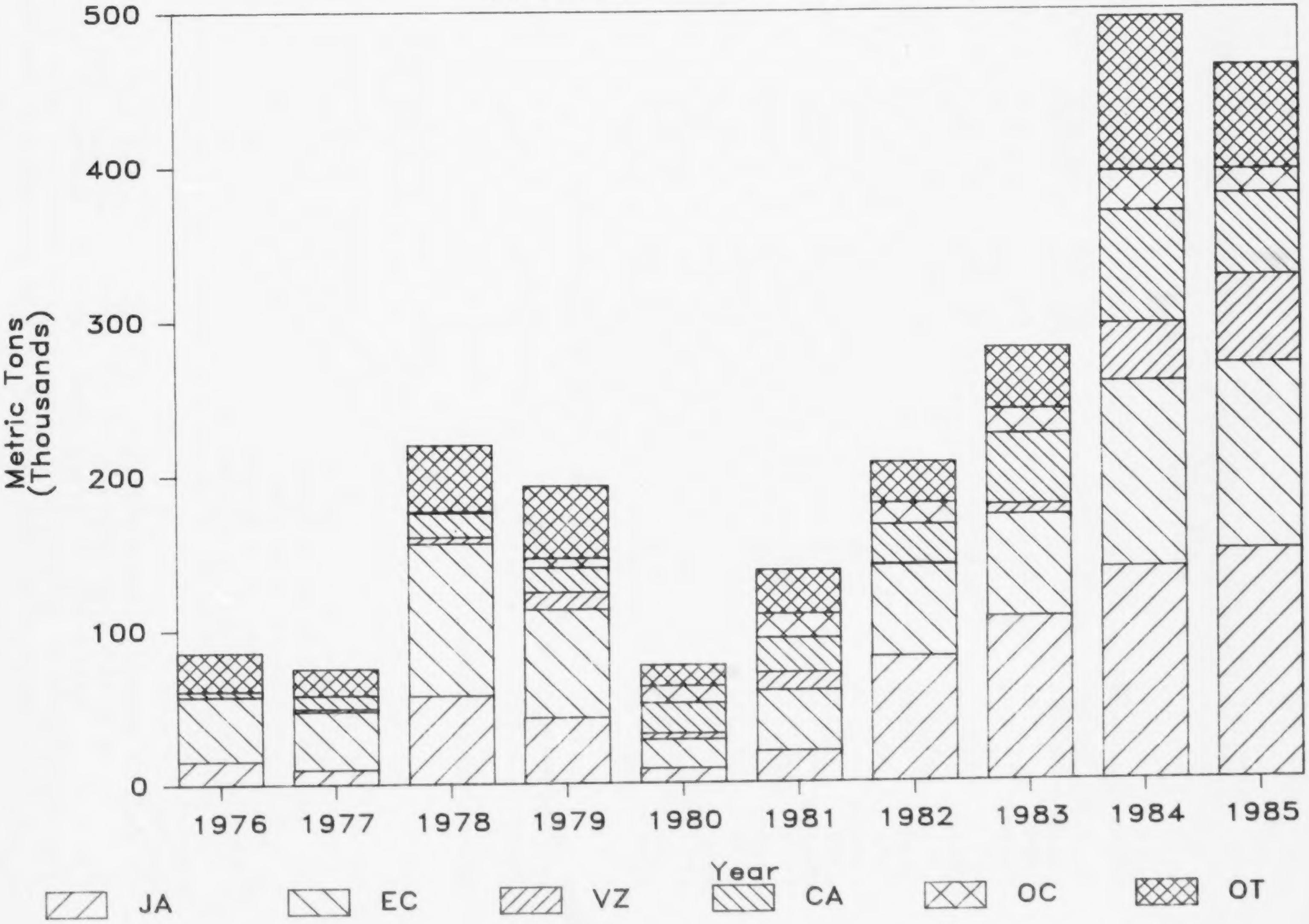


TABLE 4
U.S. ALUMINUM MILL PRODUCTS IMPORTS AND ANNUAL CHANGE BY SOURCE, 1976-85,
(Metric Tons)

Year	JAPAN	EEC	VENEZUELA	CANADA	OTHERS	TOTAL
1985	148,707	120,801	56,828	53,163	83,474	462,973
Change	+ 8%	+ 0%	+ 52%	- 56%	- 34%	- 6%
1984	137,742	120,591	37,347	72,736	125,876	494,292
Change	+ 30%	+ 83%	+456%	+ 59%	+125%	+ 76%
1983	106,303	65,969	6,712	45,706	55,972	280,480
Change	+ 32%	+ 12%	+12H%	+ 78%	+ 38%	+ 36%
1982	88,868	59,164	510	25,650	40,455	206,647
Change	+299%	+ 50%	- 96%	+ 14%	- 8%	+ 50%
1981	20,263	39,431	11,582	22,557	40,019	137,852
Change	+115%	+109%	+210%	+ 15%	+ 79%	+ 81%
1980	9,432	18,842	3,740	19,580	24,245	76,239
Change	- 78%	- 73%	- 66%	+ 21%	- 54%	- 61%
1979	42,733	70,333	10,967	16,129	53,215	193,386
Change	- 25%	- 29%	+165%	+ 2%	+ 21%	- 12%
1978	57,274	98,678	4,143	15,744	43,921	219,760
Change	+487%	+163%	+154%	+ 80%	+157%	+194%
1977	9,759	37,507	1,632	8,725	17,118	74,741
Change	- 37%	- 10%	+54K%	+138%	- 31%	- 13%
1976	15,525	41,860	3	3,685	24,677	85,730
Average Yearly Trade And Change						
1976-85	62,861	67,317	13,347	28,366	51,377	223,210
Change	+ 92%	+ 34%	+64H%	+ 42%	+ 33%	+ 38%

Source: The Aluminum Association

TABLE 5
ALUMINUM MILL PRODUCTS: U.S. PRODUCERS' SHIPMENTS, IMPORTS, APPARENT CONSUMPTION, RATIO OF IMPORTS TO CONSUMPTION, AND RATES OF GROWTH, 1976-1985,
(Metric Tons)

Year	Shipments	Imports	Apparent Consumption	Ratio of Imports To Consumption
1985	5,323,999	462,972	5,588,052	8.3%
Change	1.3%	- 6.3%	- 1.3%	
1984	5,395,990	494,292	5,661,634	8.7%
Change	+ 7.1%	+ 76.2%	+ 10.6%	
1983	5,038,556	280,480	5,116,886	5.5%
Change	+ 18.0%	+ 35.7%	+ 20.3%	
1982	4,270,616	206,647	4,253,939	4.9%
Change	- 11.0%	+ 49.9%	- 8.1%	
1981	4,798,149	137,852	4,626,793	3.0%
Change	- 0.5%	+ 80.8%	+ 1.7%	
1980	4,820,376	76,239	4,550,307	1.7%
Change	- 8.2%	- 60.6%	- 11.9%	
1979	5,252,653	193,386	5,164,072	3.7%
Change	- 1.5%	- 12.0%	- 3.1%	
1978	5,331,126	219,760	5,326,730	4.1%
Change	+ 10.9%	+194.0%	+ 14.6%	
1977	4,807,221	74,741	4,647,616	1.6%
Change	+ 7.2%	- 12.8%	+ 7.2%	
1976	4,483,807	85,730	4,335,576	2.0%
Annual Average Growth				
1976-85	+ 2.3%	+ 38.3%	3.3%	

Source: The Aluminum Association
1985 Shipments--U. S. Department of Commerce

In 1981, Japan supplanted the EEC as the United States' largest supplier of aluminum mill products. Additionally, exports to the U.S. from the EEC increased several fold during the first half of the 1980s. In fact, all traditional suppliers increased their shipments to the U.S., and nontraditional suppliers became a presence in the U.S. market. Principal nontraditional suppliers include Venezuela, Brazil, and Argentina.

Sheet and plate make up the largest product segment of the aluminum industry, accounting for 58 percent of total U.S. producers' shipments in 1985. Both sheet 1/ and plate producers have followed the pattern of increases in shipments and apparent consumption set by all aluminum mill products.

1/ Sheet figures include aluminum circles and discs.

Imports have increased dramatically in both categories. During the period 1976 to 1985, aluminum sheet and plate imports increased at an annual average of 42.0 percent and 70.8 percent, respectively. The United States became a net importer of sheet in 1982 and of plate in 1983.

Aluminum sheet accounted for 93 percent of all U.S. sheet and plate imports in 1985. Imports captured 10 percent of the U.S. aluminum sheet market in 1985 and 18 percent of the aluminum plate market. The largest foreign supplier of aluminum sheet to the U.S. market is Japan, a country that has closed the bulk of its primary aluminum capacity because of high production costs and instead has concentrated on establishing a large mill product industry. In 1985 the Japanese producers, while supplying 41 percent of total sheet imports, were able to ship 65 percent of this to the United States under the reduced duty rate available under TSUSA 806.30 and the remainder under the normal 3 percent duty. Table 6 shows how the import to consumption ratio of aluminum sheet has increased since 1975.

The EEC, accounting for 67 percent of all U.S. plate imports in 1985, has become the largest foreign supplier of aluminum plate, with France supplying more than one-half of the EEC total. These producers pay a duty of only 3 percent to enter the U.S. market. Table 7 shows how the import to consumption ratio of aluminum plate has increased since 1975.

Imports have captured more than 27 percent of the U.S. aluminum rod and bar market and 11 percent of the total rod, bar, wire and cable market. U.S. producers' shipments, imports, and consumption of aluminum rod and bar and wire and cable are shown in tables 8 and 9.

Venezuela has become the largest foreign supplier for these markets. Venezeula's producers supplied 81 percent of the total rod and bar imports and 58 percent of the total wire and cable imports, with almost all entering the United States duty-free under the Generalized System of Preferences. Venezuela lost its GSP status for aluminum rod in June 1985 because it exceeded 50 percent of total imports for these products. Brazil, the second largest source of imports of these products, became a major supplier for the first time in 1984. During the period 1976 to 1985, rod and bar imports increased at an average annual rate of 54.6 percent, and wire and cable imports increased at a rate of 50.4 percent.

TABLE 6

ALUMINUM SHEET: U.S. PRODUCERS' SHIPMENTS, IMPORTS, APPARENT CONSUMPTION, RATIO OF IMPORTS TO CONSUMPTION, AND RATES OF GROWTH, 1976-1985,

(Metric Tons)

Year	Shipments	Imports	Apparent Consumption	Ratio of Imports To Consumption
1985	2,959,148	324,618	3,146,495	10.3%
Change	- 4.1%	- 14.1%	- 4.5%	
1984	3,085,821	377,854	3,294,158	11.5%
Change	+ 3.1%	+ 62.8%	+ 6.6%	
1983	2,993,287	232,167	3,091,045	7.5%
Change	+ 20.6%	+ 27.7%	+ 22.2%	
1982	2,481,629	181,858	2,529,041	7.2%
Change	- 7.3%	+ 69.2%	- 3.3%	
1981	2,676,222	107,477	2,615,989	4.1%
Change	+ 4.2%	+ 94.7%	+ 6.7%	
1980	2,567,359	55,202	2,451,276	2.3%
Change	- 10.2%	- 64.7%	- 13.8%	
1979	2,858,568	156,308	2,844,023	5.5%
Change	- 3.0%	- 19.3%	- 5.9%	
1978	2,948,381	193,736	3,021,914	6.4%
Change	+ 9.8%	+236.6%	+ 16.4%	
1977	2,684,568	57,550	2,595,607	2.2%
Change	+ 7.8%	- 14.5%	+ 7.6%	
1976	2,490,356	67,332	2,411,620	2.8%
	Annual Average Growth			
1976-85	+ 2.3%	+ 42.0%	+ 3.6%	

Source: The Aluminum Association
1985 Shipments--U. S. Department of Commerce

TABLE 7

ALUMINUM PLATE: U.S. PRODUCERS' SHIPMENTS, IMPORTS, APPARENT CONSUMPTION, RATIO OF IMPORTS TO CONSUMPTION, AND RATES OF GROWTH, 1976-1985, (Metric Tons)

Year	Shipments	Imports	Apparent Consumption	Ratio of Imports To Consumption
1985	123,298	24,693	135,887	18.2%
Change	- 5.0%	+ 5.7%	- 2.8%	
1984	129,729	23,351	139,801	16.7%
Change	+ 34.3%	+112.5%	+ 43.4%	
1983	96,616	10,988	97,467	11.3%
Change	- 1.4%	+ 73.6%	+ 5.6%	
1982	97,977	6,331	92,299	6.9%
Change	- 23.7%	+ 36.9%	- 19.0%	
1981	128,368	4,625	114,000	4.1%
Change	- 10.7%	+130.8%	- 8.0%	
1980	143,790	2,004	123,941	1.6%
Change	+ 1.9%	- 65.2%	- 7.6%	
1979	141,069	5,755	134,194	4.3%
Change	+ 11.1%	+ 93.1%	+ 12.6%	
1978	127,007	2,981	119,211	2.5%
Change	+ 13.8%	+264.9%	+ 15.9%	
1977	111,587	817	102,824	0.8%
Change	+ 7.5%	- 15.2%	+ 8.0%	
1976	103,765	964	95,200	1.0%
		Average Annual Growth		
1976-85	+ 3.1%	+ 70.8%	- 5.3%	

Source: The Aluminum Association
1985 Shipments--U.S. Department of Commerce

TABLE 8

ALUMINUM ROD AND BAR: U.S. PRODUCERS' SHIPMENTS, IMPORTS, APPARENT CONSUMPTION, RATIO OF IMPORTS TO CONSUMPTION, AND RATES OF GROWTH, 1976-1985,

(Metric Tons)

Year	Shipments	Imports	Apparent Consumption	Ratio of Imports To Consumption
1985	163,120	58,379	211,133	27.7%
Change	+ 8.6%	+ 56.4%	+ 19.0%	
1984	150,140	37,317	177,418	21.0%
Change	+ 9.6%	+199.8%	+ 28.2%	
1983	136,986	12,449	138,379	9.0%
Change	+ 6.0%	+172.9%	+ 25.5%	
1982	129,275	4,562	110,259	4.1%
Change	- 26.4%	- 70.6%	- 23.9%	
1981	175,742	15,531	144,796	10.7%
Change	- 22.5%	+109.5%	- 15.9%	
1980	226,799	7,413	172,189	4.3%
Change	+ 24.1%	- 56.9%	+ 0.0%	
1979	182,800	17,218	172,117	10.0%
Change	+ 3.6%	+ 71.5%	+ 8.0%	
1978	176,499	10,039	159,421	6.3%
Change	+ 62.1%	+ 22.0%	+ 52.3%	
1977	108,863	8,231	104,650	7.9%
Change	- 6.2%	- 13.2%	+ 4.0%	
1976	116,017	9,483	100,592	9.4%
		Average Annual Growth		
1976-85	+ 6.5%	+ 54.6%	+ 10.8%	

Source: The Aluminum Association
1985 Shipments--U. S. Department of Commerce

TABLE 9

ALUMINUM WIRE AND CABLE: U.S. PRODUCERS' SHIPMENTS, IMPORTS, APPARENT CONSUMPTION, RATIO OF IMPORTS TO CONSUMPTION, AND RATES OF GROWTH, 1976-1985,

(Metric Tons)

Year	Shipments	Imports	Apparent Consumption	Ratio of Imports To Consumption
1985	419,453	11,601	424,416	2.7%
Change	+ 12.8%	- 20.8%	+ 11.3%	
1984	371,950	14,653	381,223	3.8%
Change	+ 8.9%	+281.6%	+ 17.4%	
1983	341,559	3,840	324,617	1.2%
Change	+ 11.6%	+156.3%	+ 15.5%	
1982	306,179	1,498	281,031	0.5%
Change	- 12.6%	+ 2.3%	- 9.0%	
1981	350,360	1,464	308,743	0.5%
Change	- 7.7%	+ 34.7%	- 9.6%	
1980	379,661	1,087	341,389	0.3%
Change	- 11.3%	- 66.0%	- 15.5%	
1979	428,196	3,197	403,847	0.8%
Change	+ 4.5%	+ 79.9%	+ 7.7%	
1978	409,598	1,777	375,075	0.5%
Change	+ 10.4%	- 1.2%	+ 10.5%	
1977	371,042	1,798	339,556	0.5%
Change	+ 15.2%	- 13.4%	+ 12.0%	
1976	322,054	2,077	303,268	0.7%
		Average Annual Growth		
1976-85	+ 3.5%	+ 50.4%	+ 4.5%	

Source: The Aluminum Association
1985 Shipments--U.S. Department of Commerce

Imports captured almost 7 percent of the aluminum foil market in 1985, with the major suppliers being the EEC, Japan and Canada. Until 1981, the United States was a net exporter of aluminum foil. Since 1982, however, aluminum foil imports have tripled, while exports have decreased slightly. U.S. producers' aluminum foil shipments, imports, and consumption are shown in table 10.

TABLE 10
ALUMINUM FOIL: U.S. PRODUCERS' SHIPMENTS, IMPORTS, APPARENT CONSUMPTION, RATIO OF IMPORTS TO CONSUMPTION, AND RATES OF GROWTH, 1976-1985,
(Metric Tons)

Year	Shipments	Imports	Apparent Consumption	Ratio of Imports To Consumption
1985	366,823	25,935	387,283	6.7%
Change	- 9.8%	+ 5.9%	- 9.1%	
1984	406,877	24,497	425,968	5.8%
Change	+ 4.8%	+ 84.7%	+ 7.4%	
1983	388,279	13,262	396,573	3.3%
Change	+ 14.0%	+ 51.3%	+ 15.4%	
1982	340,651	8,767	343,552	2.6%
Change	- 13.1%	+ 43.9%	- 11.5%	
1981	391,908	6,092	388,321	1.6%
Change	+ 2.1%	+ 47.6%	+ 5.5%	
1980	381,022	4,127	367,953	1.1%
Change	- 7.2%	- 49.2%	- 10.1%	
1979	410,505	8,131	409,307	2.0%
Change	+ 0.8%	- 16.4%	- 0.6%	
1978	404,330	9,730	411,661	2.4%
Change	+ 10.0%	+119.7%	+ 11.7%	
1977	370,135	4,428	368,638	1.2%
Change	+ 4.1%	- 11.2%	+ 4.1%	
1976	355,620	4,986	354,141	1.4%
		Average Annual Growth		
1976-85	+ 0.7%	+ 30.7%	+ 1.4%	

Source: The Aluminum Association
1985 Shipments--U.S. Department of Commerce

Aluminum pipe and tube imports, accounting for less than 1 percent of the total U.S. market prior to 1983, captured 3 percent of the total market in 1984 and 1985. The majority of all foreign shipments were from the EEC and Japan. Unlike the consumption patterns for all other aluminum mill products, apparent consumption of pipe and tube decreased 2.5 percent annually. Pipe and tube was the only market in which the United States remained a net exporter. U.S. producers' aluminum pipe and tube shipments, imports, and consumption are shown in table 11.

TABLE 11

ALUMINUM PIPE AND TUBE: U.S. PRODUCERS' SHIPMENTS, IMPORTS, APPARENT CONSUMPTION, RATIO OF IMPORTS TO CONSUMPTION, AND RATES OF GROWTH, 1976-1985,

(Metric Tons)

Year	Shipments	Imports	Apparent Consumption	Ratio of Imports To Consumption
1985	113,769	3,348	112,405	3.0%
Change	- 16.6%	- 17.8%	- 17.3%	
1984	136,533	4,074	135,868	3.0%
Change	+ 15.3%	+183.3%	+ 17.6%	
1983	118,389	1,438	115,527	1.2%
Change	+ 23.7%	+147.9%	+ 27.9%	
1982	95,709	580	90,322	0.6%
Change	- 33.4%	+ 9.6%	- 34.3%	
1981	143,790	529	137,417	0.4%
Change	- 0.6%	+ 71.2%	- 0.1%	
1980	144,697	309	137,522	0.2%
Change	- 3.9%	- 38.0%	- 4.3%	
1979	154,594	498	143,754	0.3%
Change	- 15.7%	+ 26.4%	- 15.7%	
1978	178,717	394	170,440	0.2%
Change	- 2.2%	+ 18.7%	- 1.7%	
1977	182,800	332	173,439	0.2%
Change	+ 5.5%	- 20.4%	+ 5.3%	
1976	173,274	417	164,730	0.3%
	Average Annual Growth			
1976-85	- 34.3%	+702.9%	- 31.8%	

Source: The Aluminum Association
1985 Shipments--U.S. Department of Commerce

III. Structure of the U.S. Aluminum Mill Product Industry

The U.S. aluminum industry is a major sector of the economy and is the largest nonferrous metal industry. Approximately one-half million Americans are employed in the more than 700 plants located throughout the United States. Aluminum is currently irreplaceable in many critical defense applications and is classified by the U.S. Government as a strategic commodity. It is also one of the four controlled materials in the Defense Materials System. The National Defense Stockpile contains various quantities of bauxite, alumina, and aluminum.

The aluminum industry is highly integrated, with the major firms producing primary metal in addition to mill products, such as sheet, plate, rod, and wire, and finished products, such as aluminum siding and cans. Market concentration is lower in the mill product sector than in the primary sector because of the existence of a number of independent producers, particularly for extrusions (shapes, rod, bar, tube) and forgings (hammered or pressed products).

Since the end of World War II, the number of plants producing aluminum mill products has increased substantially. The number of mill product plants (broken down by product) between World War II and 1985 are provided in table 12.

TABLE 12
NUMBER OF U.S. ALUMINUM MILL PRODUCT PLANTS BETWEEN WORLD WAR II AND 1985, BY PRODUCT

Product	1985	1982	1977	1967	World War II
Sheet & Plate	72	68	49	57	13
Foil	26	27	27	26	8
Rod, bar (rolled and continuously cast)	18	22	31	21	4
Bare wire (conductor and nonconductor)	61	69	125	67	10
ASCR and bare cable	16	16	59	36	na
Insulated or covered wire and cable	43	43	90	61	12
Extruded products	217	226	222	177	17
Drawn tube	19	19	22	24	16
Welded tube	16	18	32	21	na
Powder	19	17	18	19	12
Forgings	48	44	74	52	59
Impacts	13	16	29	na	na

na=Not Available

Source: World War II, 1967 and 1977--U. S. Department of Commerce; 1982 and 1985--The Aluminum Association

In 1985, aluminum mill products were produced at 546 plants, owned by 332 firms. Of these aluminum mill product firms, less than 50 produce the three major products (sheet, plate, and foil) which account for more than two-thirds of the total volume of aluminum mill product shipments.

Despite the large number of firms in the U.S. aluminum mill product industry, there are, in fact, only five firms producing the majority of all aluminum mill products. In 1985, these five major producers accounted for 83 percent of total sheet and plate capacity, 68 percent of foil capacity, 52 percent of wire, rod and cable capacity, and 32 percent of total extrusion capacity. The four U.S.-based producers (Alcoa, Alumax, Kaiser and Reynolds) are discussed below and the Canadian-based Alcan, in the Canadian section.

1. Alcoa

Alcoa is fully integrated from the mining of bauxite to the production of aluminum mill products and fabricated products. Alcoa's rolling mills, producing sheet, plate and foil, account for the bulk of the company's revenues, shipments, and employment. In the United States, Alcoa has 13 aluminum mill product plants located throughout the country. Internationally, Alcoa operates plants through its affiliates in the United Kingdom, Brazil, Australia, the Federal Republic of Germany, France, Mexico, and the Netherlands, which produce semifabricated aluminum products.

2. Alumax

Alumax, formed in 1974 when Amax sold a 50 percent interest in its aluminum group to Mitsui and Co., Ltd. (which later sold 5 percent to Nippon Steel Corp.), is a major integrated U. S. aluminum producer. Alumax operates three U.S. smelters and 21 aluminum rolling mill plants, as well as a number of other aluminum fabricating plants. In addition, Alumax produces aluminum mill products in Canada, the FRG, the Netherlands and the United Kingdom.

3. Kaiser

Kaiser Aluminum and Chemical Corp. is a fully integrated aluminum producer. Kaiser produces primary aluminum at three U.S. smelters and aluminum mill products at 13 U.S. plants. Kaiser has either full or partial ownership in plants operated by the following companies: Phoenix Aluminum S.A. in Belgium (90 %); Nyffelen Corti AG in the FRG and Switzerland (100%); Kaiser Aluminium Europe Inc. in the FRG (100%); Hindustan Aluminium Corp. in India (27%); and Anglesey Aluminium Ltd. in the United Kingdom (67%).

4. Reynolds

Reynolds Metals Co., like Alcoa, Alumax, and Kaiser, is a fully integrated aluminum producer. Reynolds has primary aluminum production capacity at three U.S. smelters and one Canadian smelter and produces aluminum mill products at 13 U.S. plants. In addition, Reynolds has either full or partial ownership in aluminum mill products plants in Belgium (100%), Canada (100%), the FRG (100%), Mexico (53%), the Netherlands (100%), Spain (50.6%), and Venezuela (15% and 100%).

IV. U.S. Aluminum Market Features

Consumption of all aluminum (both primary and aluminum mill products) reached an historic high of 6.9 million MT in 1984. This figure declined slightly to 6.5 million MT in 1985. Although consumption of aluminum increased at an annual rate of only 1.5 percent over the period 1976 to 1984, the aluminum industry outperformed many other metal industries. A recent study by the Department of Commerce and Bureau of Mines (Domestic Consumption Trends, 1972-1982, and Forecasts to 1993 for Twelve Major Metals) found that over a 10-year period only titanium, tungsten, and the platinum-group metals had higher rates of growth in consumption than aluminum. In fact, the remaining eight metals studied--chromium, cobalt, copper, lead, manganese, nickel, tin, and zinc--all experienced decreased annual rates of consumption.

In 1984, the major aluminum consuming sectors were containers and packaging (28.1%), transportation (20.5%), building and construction (19.9%), electrical (10.4%), consumer durables (7.7%), machinery and equipment (5.7%), and other uses (7.7%). Growth in consumption has not been shared equally by all of aluminum's end-uses. A study by the Department of Commerce that broke down the consumption of aluminum into 54 end-use categories, by 4-digit SIC codes, found that 27 of the end-uses suffered annual declines in consumption over the period 1974 to 1984 ranging from -0.2 to -10.2 percent. The largest decline was registered by plumbing fixtures and heating equipment, a very small end-use which accounted for just 10,000 MT of consumption. Another 27 end-uses displayed positive growth rates, ranging from no growth to 9.3 percent. The largest growth was in drapery hardware, blinds, and shades, an end-use which consumed just over 32,500 MT.

The sustained growth in aluminum consumption may be attributed to the aluminum industy's strong research efforts toward developing new products and establishing new markets. The most significant development in this respect was the increase in aluminum used by the containers and packaging sector. The share of aluminum consumption accounted for by this sector grew from 16.6 percent of the market in 1974 to 26.2 percent in 1984. Over this period, consumption by the containers and packaging sector increased by 6.1 percent annually, and consumption by transporation increased by 0.4 percent annually. All other major consuming sectors experienced declines in consumption.

The largest single end-use for aluminum is in metal cans. This has been the fastest growing major end-use since 1974, with an annual growth rate of about 7.8 percent. Alone, it accounts for almost 25 percent of consumption. The rapid growth occurred through the substitution of aluminum for steel in beverage cans, so that now over 90 percent of beverage cans are aluminum.

Although there has been experimentation with different size cans and the packaging of beverages once thought unamenable to aluminum cans in an attempt to increase market size, this end-use is close to saturation. Further growth will depend mainly on an increase in beverage consumption. It is likely that a percentage of the growth in demand may be offset by technologies allowing more cans to be made per pound of aluminum.

A market where aluminum does have room for expansion is the food can market, where aluminum only maintains a 4 percent market share. This market, however, is only half the size of the beverage can market, and there is a technological obstacle to overcome before such cans become practical (a means must be found of introducing internal pressure into the can to prevent its collapse).

Aluminum consumption by the building and construction sector has declined, primarily because of the 40 percent decline in the use of aluminum for residential siding since 1974. Vinyl siding has supplanted aluminum for residential siding due to vinyl siding's lower price and superior physical characteristics. Consumption of sheet for mobile homes and for bridge and highway construction has also declined. Meanwhile, consumption of aluminum in windows, doors and screens has increased 18 percent since 1974, partially offsetting declines in other construction and building end-uses.

The increased use of aluminum in passenger cars resulted in an increase in consumption in the transporation sector. Passenger cars represent a potentially large market for aluminum, and gains are already being realized in this end-use, such as aluminum substituting for copper in radiators. From 1976 to 1986 the amount of aluminum used in the average car increased from 85.5 to 139.5 pounds. By 1990 this figure is expected to be close to 200 pounds. Much of the increase is expected to result from an increase in aluminum in engine components, including cylinder heads and blocks. Additionally, cast, forged, and extruded aluminum components are likely to be used in power trains, drive lines, and suspension systems.

Overall, growth in aluminum consumption is expected to increase at an annual rate of about 3.5 percent through 1990. This growth rate will depend largely upon the development of new products and markets. New aluminum products which will have potential in the aerospace industry include aluminum-lithium alloys and metal matrix composites utilizing aluminum. These products will be essential in aiding the aluminum industry in maintaining its share of the aerospace market, which has been threatened by carbon fiber reinforced composites. The aluminum industry is also concentrating on the containers and packaging industry to increase consumption. In addition to aluminum food cans, the industry is developing aluminum-plastic/paper laminates for packaging foods and beverages. Such aluminum packages have already replaced the metal can for the U.S. military's field rations containers.

V. U.S. Exports of Aluminum Mill Products

In 1980 U.S. exports of aluminum mill products reached a record high of 346,000 MT, a 48 percent increase over the 1976 total. By 1985 aluminum mill products had declined 43 percent from the 1980 level, to 199,000 MT. The majority of these exports (80 percent) were sheet and plate (see graph 3).

The largest importers of U.S. aluminum mill products in 1985 were Canada (65 percent), Mexico (12 percent), the EEC (5 percent), Venezuela (3 percent), Japan (2 percent), Oceania and Brazil (1 percent each), with less than 1 percent going to Argentina and the Peoples' Republic of China. The annual change in aluminum mill product exports by destination between 1976 and 1985 are shown in table 13 and graph 4.

The declines in aluminum mill product exports are the result of both a strong U.S. dollar and a major effort by other countries to protect their aluminum mill products industries, which serve mainly as export earners, through a web of nontariff barriers and high tariff rates. The decline of the dollar will improve the situation somewhat, but the trade barriers will still exclude U.S. aluminum mill products from foreign markets. These barriers not only prevent U.S. producers from competing in foreign markets, but they also penalize the consumers of these products. Traditionally trade barriers, instead of nurturing competitive industries, have accentuated inefficiency. The chief economist for one of the leading banks in Argentina, a country with very high tariff rates and a number of nontariff barriers, pointed out that:

> The so-called infant-industry approach to development has often left us with infantile industries. In the end it locks a great amount of our economic resources in unproductive areas. 1/

In table 14 and graphs 5-10, aluminum mill products imports to and exports from the United States between 1976 and 1985 are compared by product to demonstrate how U.S. trade in aluminum mill products has changed from net exporter to net importer as a result of these barriers.

1/ George Hatch. "Boosting Growth in Private Sector is Key to Stabilizing Argentina's Austerity Plan." The Wall Street Journal. 23 December 1985: 18.

U.S. ALUMINUM MILL PRODUCTS

EXPORTS, BY PRODUCT (GRAPH 3)

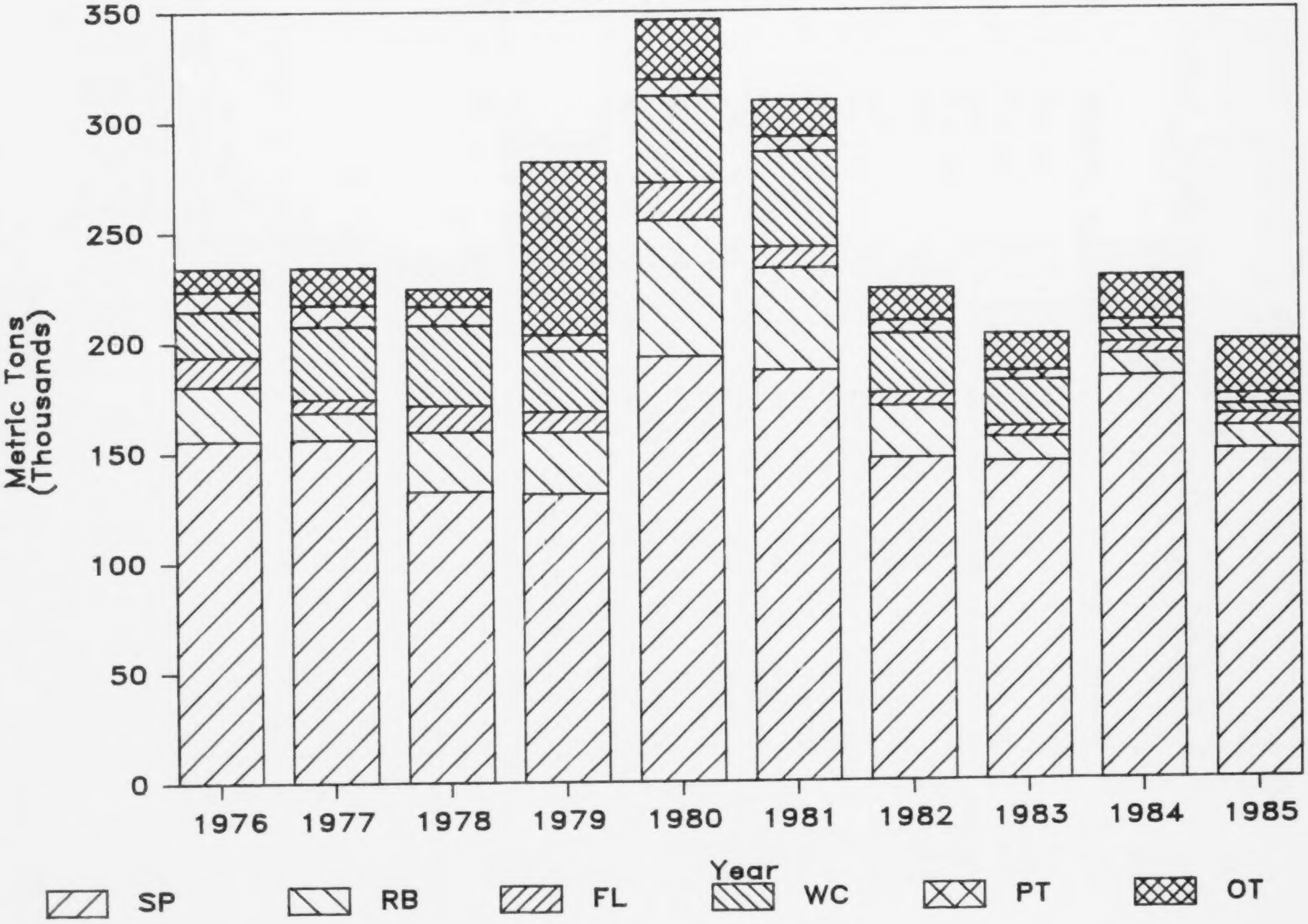


TABLE 13
U.S. ALUMINUM MILL PRODUCT EXPORTS AND ANNUAL CHANGE, BY DESTINATION, 1976-85
(Metric Tons)

Year	CANADA	MEXICO	EEC	VENEZUELA	OTHERS	TOTAL
1985	129,541	24,175	10,190	5,758	29,266	198,920
Change	- 4%	+ 6%	- 69%	+ 83%	- 2%	- 13%
1984	134,210	22,914	32,496	9,295	29,733	228,648
Change	+ 32%	+ 168%	- 13%	+ 83%	- 40%	+ 13%
1983	101,871	8,537	37,148	5,086	49,508	202,150
Change	+ 16%	- 76%	+ 9%	- 25%	- 17%	- 10%
1982	87,664	35,197	33,991	6,751	59,721	223,324
Change	- 27%	- 33%	+ 5%	- 56%	- 33%	- 28%
1981	119,985	52,268	32,364	15,442	89,149	309,208
Change	+ 15%	+ 47%	- 47%	- 11%	- 30%	- 11%
1980	104,800	35,641	61,815	17,415	126,637	346,308
Change	- 14%	+ 24%	+ 9%	+ 102%	+ 94%	+ 23%
1979	122,349	28,786	56,959	8,627	65,246	281,967
Change	+ 46%	+ 24%	+ 50%	- 1%	- 7%	+ 26%
1978	83,935	23,185	37,870	8,679	70,487	224,156
Change	- 9%	+ 44%	- 34%	- 19%	+ 15%	- 4%
1977	92,547	16,121	57,251	7,323	61,104	234,346
Change	- 6%	- 40%	+ 8%	+ 74%	+ 18%	+ 0%
1976	97,886	26,292	53,216	7,323	51,660	233,961
Average Yearly Trade And Change						
1976-85	107,479	27,381	41,330	8,859	63,250	248,299
Change	+ 5%	+ 18%	- 9%	+ 16%	- 0.1%	- 0.4%

Source: The Aluminum Association

U.S. ALUMINUM MILL PRODUCTS

EXPORTS, BY DESTINATION (GRAPH 4)

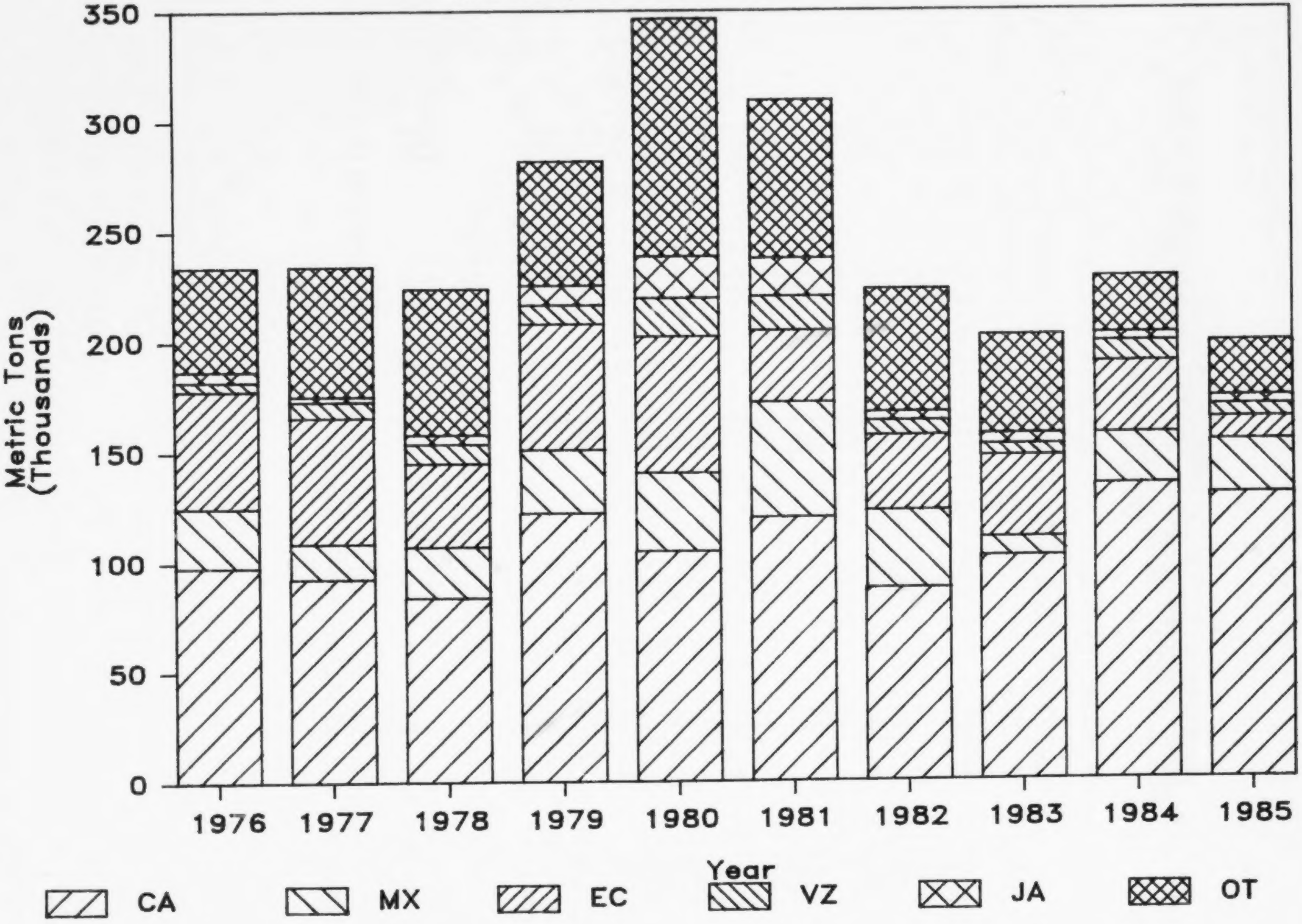


TABLE 14
ALUMINUM MILL PRODUCT ~~IMPORTS~~ TO AND EXPORTS FROM THE U.S., AND ANNUAL CHANGE, BY PRODUCT, 1976-1985, (Metric Tons)

Year	ALUMINUM MILL PRODUCTS *		ALUMINUM SHEET AND PLATE		ALUMINUM ROD AND BAR	
	Imports To US	Exports From US	Imports To US	Exports From US	Imports To US	Exports From US
1985	462,973	198,920	349,312	149,375	58,379	10,366
Change	- 6%	- 13%	- 13%	- 18%	+ 56%	+ 3%
1984	494,292	228,648	401,205	182,796	37,317	10,039
Change	+ 76%	+ 13%	+ 65%	+ 26%	+ 200%	- 9%
1983	280,480	202,150	243,205	144,375	12,444	11,056
Change	+ 36%	- 10%	+ 29%	- 1%	+ 173%	- 53%
1982	206,647	223,324	188,161	146,546	4,562	23,578
Change	+ 50%	- 28%	+ 68%	- 21%	- 71%	- 49%
1981	137,852	309,208	112,102	186,603	15,531	46,477
Change	+ 81%	- 11%	+ 96%	- 4%	+ 110%	- 25%
1980	76,239	346,308	57,207	193,138	7,413	62,023
Change	- 61%	+ 23%	- 65%	+ 47%	- 57%	+ 122%
1979	193,386	281,967	162,064	131,217	17,218	27,901
Change	- 12%	+ 26%	- 18%	- 1%	+ 35%	+ 3%
1978	219,760	224,156	196,718	132,343	10,039	27,067
Change	+ 194%	- 4%	+ 237%	- 15%	+ 55%	+ 117%
1977	74,741	234,346	58,376	156,178	8,231	12,444
Change	- 13%	+ 0%	- 15%	+ 0%	- 15%	- 50%
1976	85,730	233,961	68,286	155,590	9,483	24,908
	Average Yearly Trade And Change					
1976-85	223,210	248,299	183,663	157,838	18,334	25,586
Change	+ 38%	- 0.4%	+ 43%	+ 2%	+ 54%	+ 7%

* Includes aluminum powder and flakes.
Source: The Aluminum Association

TABLE 14--Continued

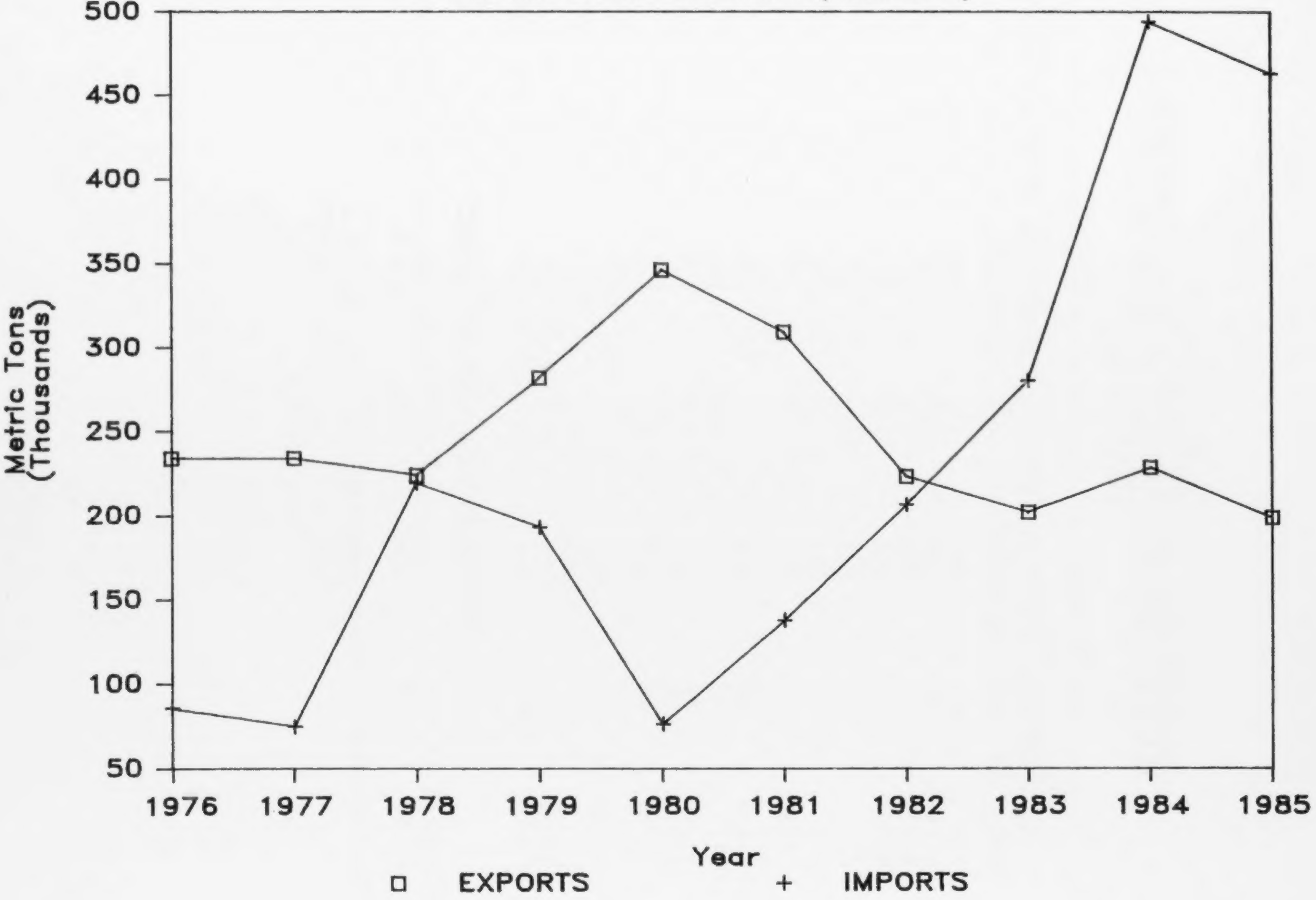
ALUMINUM MILL PRODUCT IMPORTS TO AND EXPORTS FROM THE U.S., AND ANNUAL CHANGE, BY PRODUCT, 1976-1985, (Metric Tons)

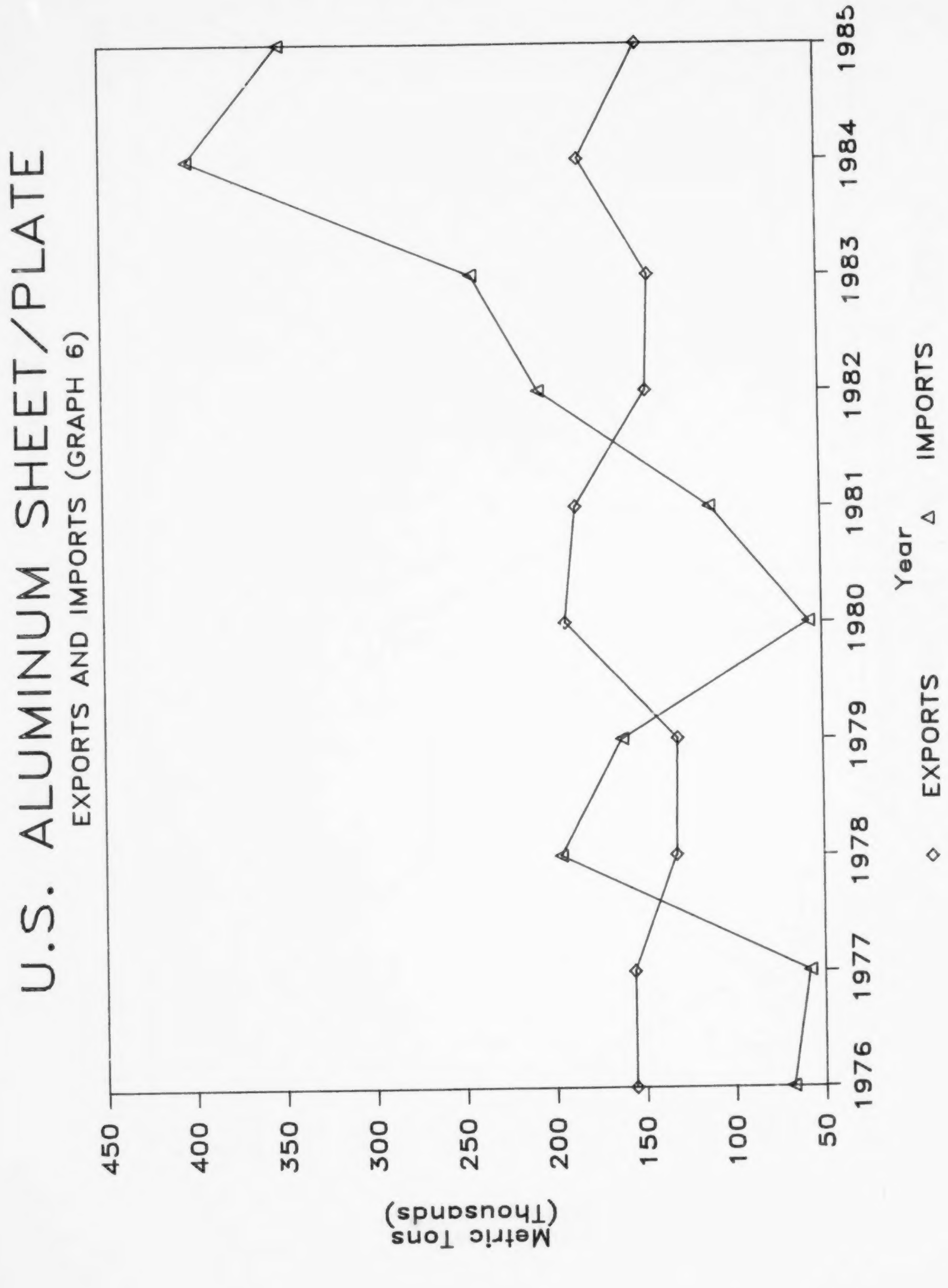
	ALUMINUM FOIL		ALUMINUM WIRE AND CABLE		ALUMINUM PIPE AND TUBE	
Year	Imports To US	Exports From US	Imports To US	Exports From US	Imports To US	Exports From US
1985	25,935	5,457	11,601	4,051	3,348	4,712
Change	+ 6%	+ 1%	- 20%	- 25%	- 18%	- 1%
1984	24,497	5,406	14,653	5,380	4,074	4,739
Change	+ 85%	+ 8%	+ 281%	- 74%	+183%	+ 10%
1983	13,262	4,968	3,840	20,786	1,438	4,333
Change	+ 51%	- 15%	+ 156%	- 22%	+148%	- 28%
1982	8,767	5,866	1,498	26,646	580	5,967
Change	+ 44%	- 39%	+ 2%	- 38%	+ 10%	- 14%
1981	6,092	9,679	1,464	43,081	529	6,902
Change	+ 48%	- 44%	+ 34%	+ 10%	+ 71%	- 8%
1980	4,127	17,196	1,089	39,358	309	7,484
Change	- 49%	+ 84%	- 66%	+ 43%	- 38%	+ 2%
1979	8,131	9,329	3,197	27,546	498	7,338
Change	- 16%	- 22%	+ 80%	- 24%	+ 26%	- 15%
1978	10,441	11,979	1,777	36,300	394	8,671
Change	+ 120%	+ 102%	- 1%	+ 9%	+ 19%	- 11%
1977	4,428	5,925	1,798	33,284	332	9,693
Change	- 11%	- 56%	- 13%	+ 60%	- 21%	+ 8%
1976	4,986	13,412	2,077	20,863	420	8,691
Average Yearly Trade And Change						
1976-85	10,996	8,922	4,299	25,729	1,192	6,877
Change	+ 31%	+ 2%	+ 50%	- 7%	+ 42%	- 6%

Source: The Aluminum Association

U.S. ALUMINUM MILL PRODUCTS

EXPORTS AND IMPORTS (GRAPH 5)



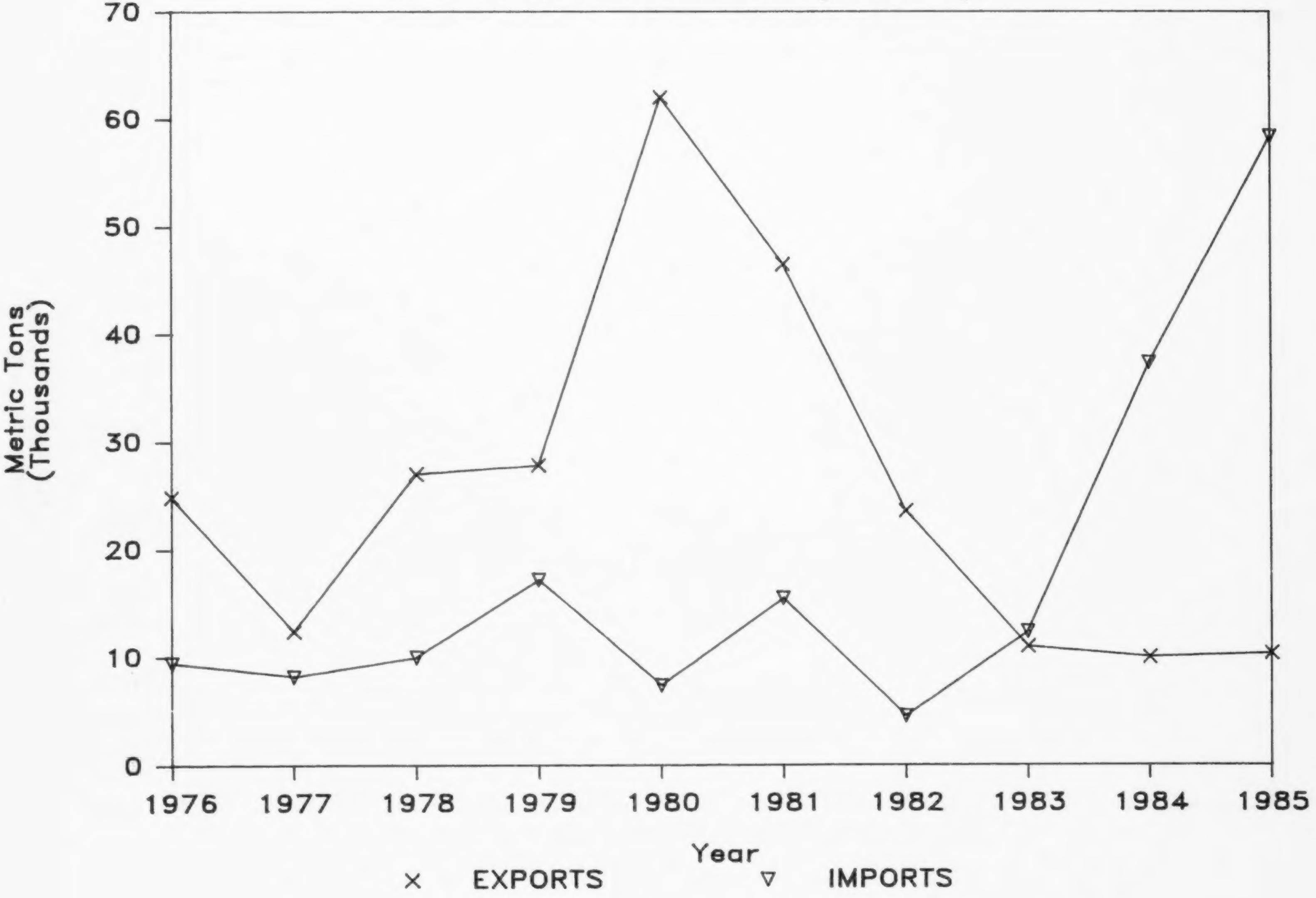


U.S. ALUMINUM SHEET/PLATE

EXPORTS AND IMPORTS (GRAPH 6)

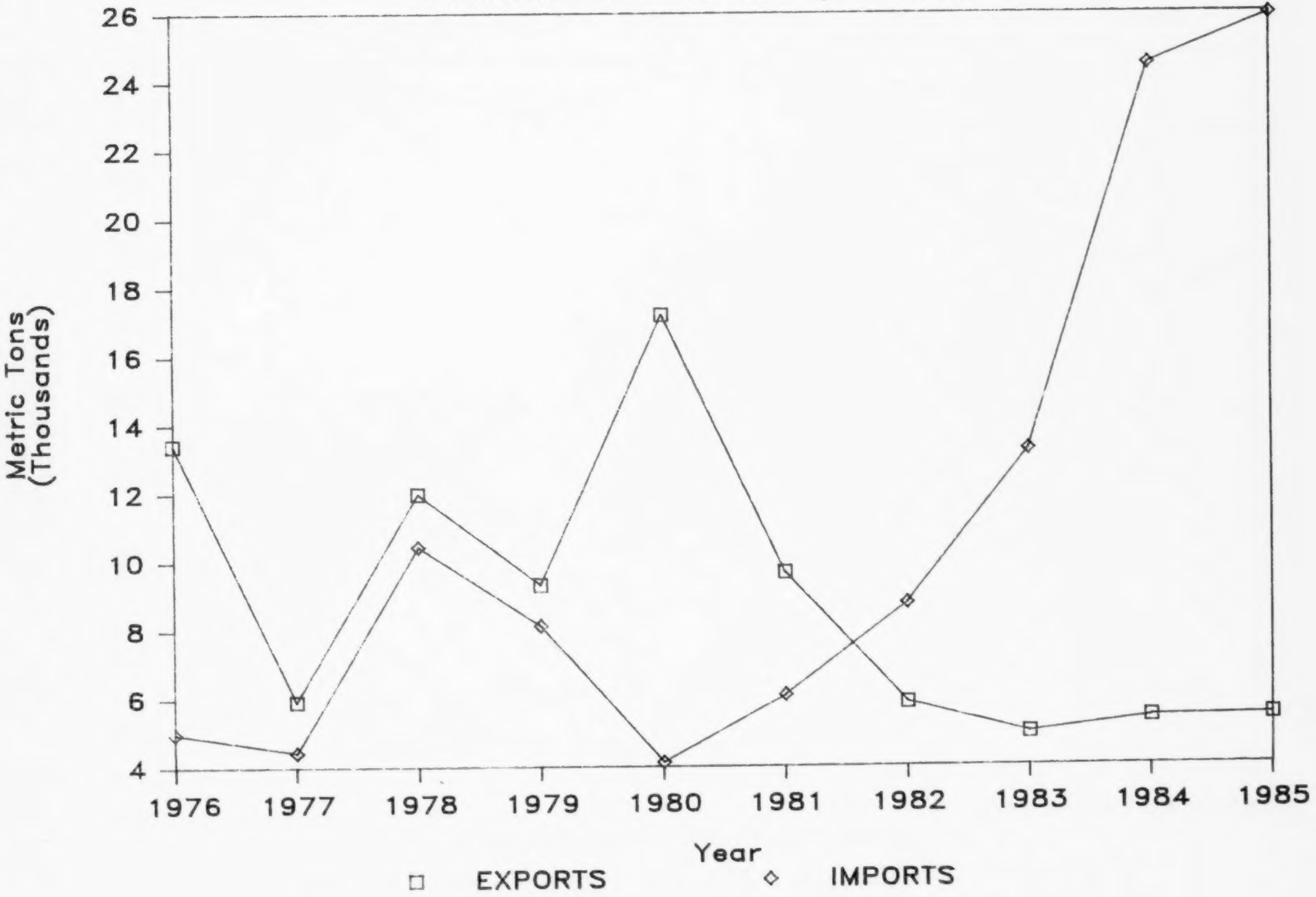
U.S. ALUMINUM ROD/BAR

EXPORTS AND IMPORTS (GRAPH 7)



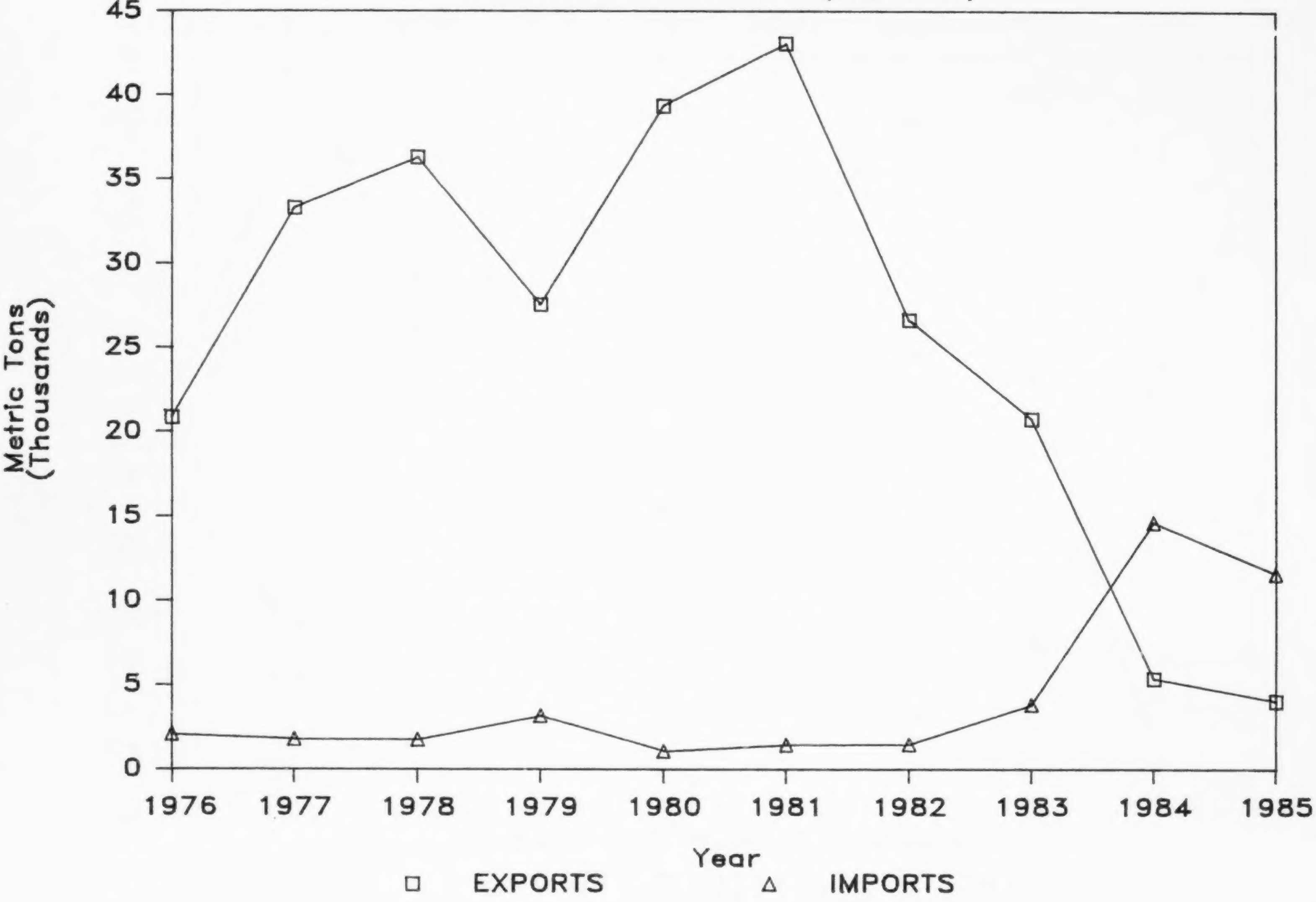
U.S. ALUMINUM FOIL

EXPORTS AND IMPORTS (GRAPH 8)



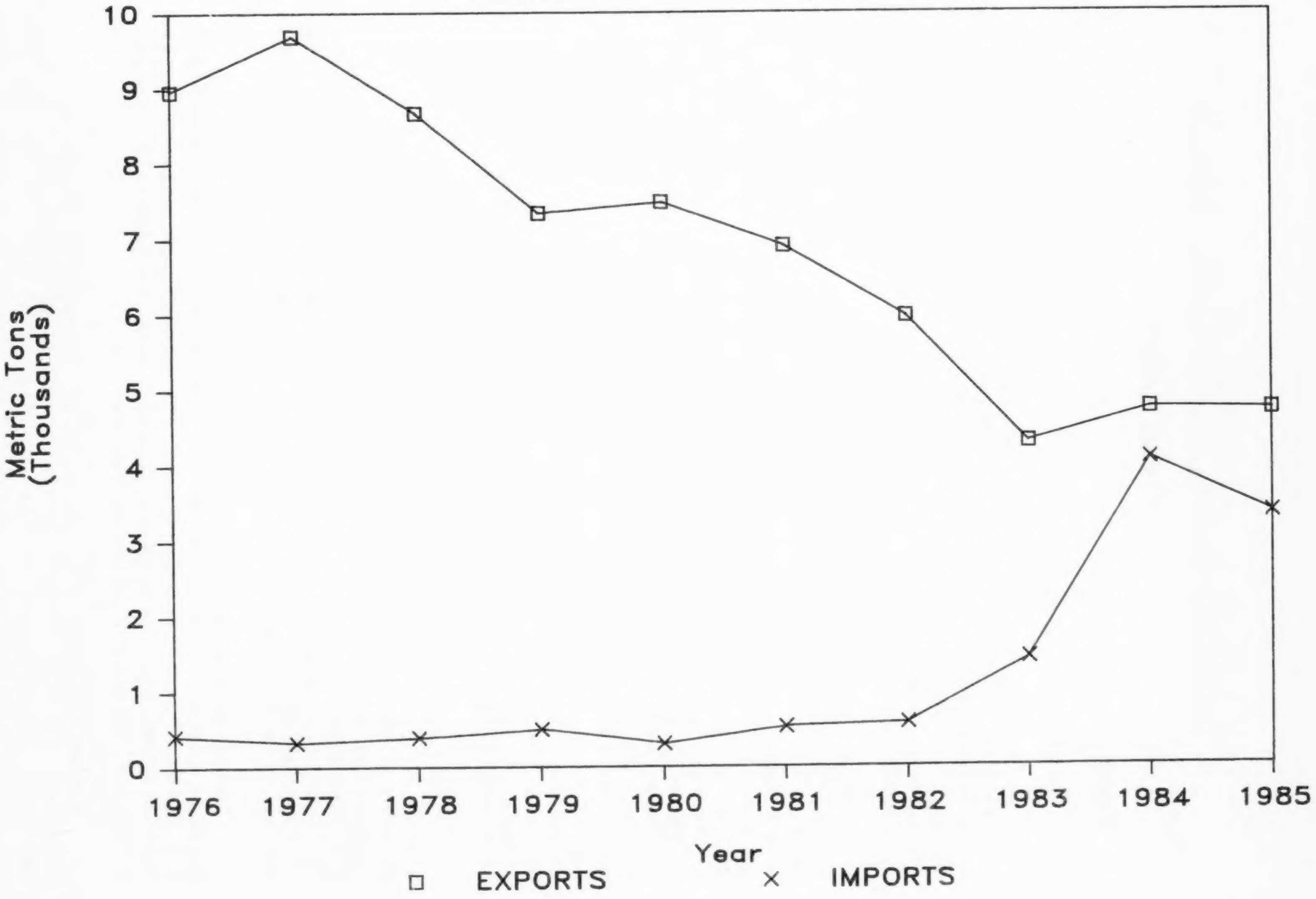
U.S. ALUMINUM WIRE/CABLE

EXPORTS AND IMPORTS (GRAPH 9)



U.S. ALUMINUM PIPE/TUBE

EXPORTS AND IMPORTS (GRAPH 10)



PART 2.
FOREIGN PRODUCERS OF ALUMINUM MILL PRODUCTS

I. NORTH AMERICA

A. CANADA

1. Structure of the Canadian Aluminum Industry

Following the oil crises of the 1970s, Canada became an attractive location for new aluminum smelting capacity because of abundant and relatively inexpensive electricity. Since 1980, one smelter has begun operations and a second, Becancour, came on stream in 1986. This leaves eight smelters operating in Canada with a total capacity of 1.6 million MT.

These smelters are operated by Alcan and Reynolds, and a recently formed consortium will operate the Becancour smelter. Equity partners in the Becancour consortium consist of Pechiney and Alumax, and the Societe Generale de Financement, which is an entity of the Quebec provincial government. Although a second new smelter was anticipated for the province of Quebec, it was postponed as a result of poor worldwide market conditions for primary aluminum. The Becancour smelter, however, was a particularly attractive project because the utility which will service Becancour offered rate reductions of 59 to 66 percent in the first five years of a 25-year power agreement. The utility serving Becancour is Hydro-Quebec, which is owned by the Government of Quebec. The Government of Quebec, therefore, has a vested interest in the financial health of Becancour and also controls the cost and availability of electricity, the most significant input to production.

The United States has traditionally relied on Canada as a source of primary aluminum. However, as increasing amounts of primary aluminum capacity are lured to Quebec through low power rates, there is a concern that new processing facilities contemplated for construction in the United States may instead be located in Canada. Such a scenario may be even more likely if the current discussions concerning free trade between the two nations are successful in removing tariffs.

Canadian production of primary aluminum increased 14 percent (from 1.1 million MT to 1.2 million MT) between 1980 and 1984. Despite depressed market conditions worldwide, the Canadian smelters are operating at close to capacity levels, primarily because of low power rates.

Alcan Aluminum Ltd, as a fully integrated aluminum producer, is the largest producer of primary aluminum in North America. In addition to its Canadian smelters, Alcan operates one smelter in Kentucky, which it purchased from ARCO in 1984, as well as a number of other smelters located throughout the world.

Alcan is the single largest producer of aluminum mill products in Canada, accounting for more than 80 percent of sheet and plate capacity, 77 percent of aluminum wire and cable capacity, and 57 percent of aluminum foil capacity. Alcan, along with the second largest Canadian producer, Reynolds (which primarily produces aluminum foil), account for almost 100 percent of aluminum sheet, plate, foil, wire and cable capacity and one-third of Canadian aluminum extrusion capacity.

Alcan produces aluminum mill products at plants in Aurora, Bracebridge, and Kingston, Ontario; Richmond, British Columbia; Winnipeg, Manitoba; and Aroeda/Saguenay, Laval, and Swagingan, Quebec, as well as at partially-owned plants in Calgary, Alberta; and Winnipeg, Manitoba. In the United States, Alcan produces aluminum mill products at five plants located in Georgia, New York, Pennsylvania, and West Virginia. In all, Alcan owns and operates aluminum companies in 14 countries and has partial interests in facilities in another 20 countries.

2. Canadian Imports of Aluminum Products

Canada is a net importer of aluminum mill products. Between 1980 and 1984, such imports increased by 62 percent (from 113,000 MT to 184,000 MT). The United States is, by far, the largest supplier of these products to the Canadian market. However, the U.S. share has been declining--from 95 percent in 1980 to 73 percent in 1984.

Canada's tariff schedule is unique, based on neither the Customs Cooperation Council Nomenclature (CCCN) nor the Standard International Trade Classification (SITC). Its rates for unwrought aluminum, rod and bar, foil, powder and flakes, and pipe and tube are higher than the equivalent U.S. rates. They range from 2.1 percent for some sheet, rod, bar and wire products to 9.2 percent for foil.

Aluminum sheet and plate have a slighty lower tariff rate (2.1 percent) than the comparable U.S. rate. Sheet used for end and tab stock in cans, however, has been reclassified by the Canadians as a further manufactured product and is subject to an increased tariff rate of 8 percent.

3. Canadian Exports of Aluminum Products

Despite Canada's position as a net importer of aluminum mill products, its exports of those products increased 159 percent (from 35,000 MT to 92,000 MT) between 1980 and 1984. In 1980 slightly more than one-third of Canada's exports were destined for the U.S. market; in 1984 three-fourths were destined for the United States.

Canada's annual average aluminum mill products exports to and imports from the United States are compared in table 15 and graph 11.

TABLE 15
CANADA'S ALUMINUM MILL PRODUCT EXPORTS TO AND IMPORTS FROM THE U.S., AND ANNUAL CHANGE, BY PRODUCT, 1976-1985, (Metric Tons)

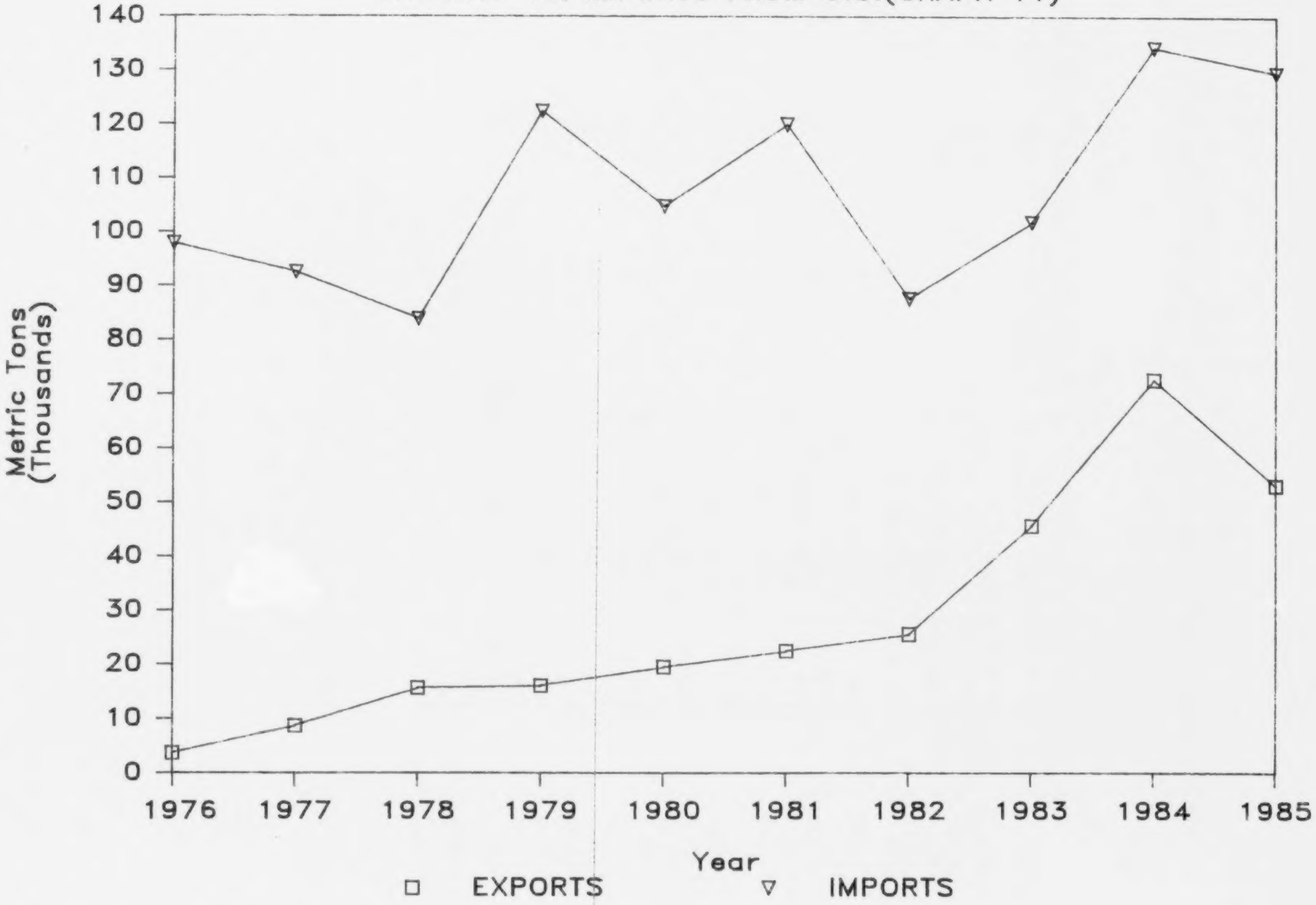
	ALUMINUM MILL PRODUCTS		ALUMINUM SHEET AND PLATE		ALUMINUM ROD AND BAR	
Year	Exports To US	Imports From US	Exports To US	Imports From US	Exports To US	Imports From US
1985	53,163	129,541	45,752	106,349	632	2,628
Change	- 56%	- 4%	- 31%	- 9%	- 19%	+ 22%
1984	72,736	134,210	66,442	116,429	532	2,152
Change	+ 59%	+ 32%	+ 69%	+ 37%	+ 22%	- 22%
1983	45,706	101,871	39,219	84,966	436	2,755
Change	+ 78%	+ 16%	+ 69%	+ 15%	+678%	+ 32%
1982	25,650	87,664	23,168	74,186	56	2,092
Change	+ 14%	- 27%	+ 8%	- 27%	+ 60%	+ 17%
1981	22,557	119,985	21,399	101,911	35	1,786
Change	+ 15%	+ 15%	+ 41%	+ 27%	- 71%	- 77%
1980	19,580	104,800	15,172	80,111	122	7,644
Change	+ 21%	- 14%	+ 13%	- 15%	- 88%	+ 38%
1979	16,129	122,349	13,380	93,809	976	5,508
Change	+ 2%	+ 46%	+ 1%	+ 38%	+199%	+197%
1978	15,744	83,935	13,202	67,892	327	1,855
Change	+ 80%	- 9%	+ 109%	- 5%	+241%	- 14%
1977	8,725	92,547	6,327	71,678	96	2,159
Change	+ 138%	- 6%	+ 132%	- 7%	- 66%	- 46%
1976	3,665	97,886	2,733	77,172	283	4,017
			Average Yearly Trade And Change			
1976-85	28,366	107,479	24,679	106,349	350	3,260
Change	+ 42%	+ 5%	+ 46%	+ 6%	+110%	+ 16%

TABLE 15--Continued
CANADA'S ALUMINUM MILL PRODUCT EXPORTS TO AND IMPORTS FROM THE U.S., AND ANNUAL CHANGE, BY PRODUCT, 1976-1985, (Metric Tons)

	ALUMINUM WIRE AND CABLE		ALUMINUM FOIL		ALUMINUM PIPE AND TUBE	
Year	Exports To US	Imports From US	Exports To US	Imports From US	Exports To US	Imports From US
1985	1,100	1,059	3,422	907	272	1,949
Change	+ 33%	- 23%	+ 15%	- 13%	- 26%	+ 28%
1984	825	1,366	2,966	1,037	367	1,520
Change	- 47%	- 20%	+ 21%	- 22%	- 25%	+ 2%
1983	1,551	1,705	2,450	1,322	486	1,488
Change	+1,121%	+ 10%	+ 31%	+ 1%	+315%	+ 18%
1982	127	1,544	1,864	1,313	117	1,266
Change	+ 46%	- 6%	+763%	- 52%	- 46%	- 33%
1981	87	1,643	216	2,719	217	1,889
Change	- 55%	+ 13%	+260%	+ 47%	+144%	+ 17%
1980	194	1,461	60	1,852	89	1,611
Change	+ 24%	- 55%	- 79%	+ 80%	- 32%	- 23%
1979	156	3,277	291	1,025	131	2,094
Change	+ 55%	+151%	- 81%	- 67%	- 13%	- 45%
1978	101	1,285	1,524	3,118	150	3,789
Change	- 76%	+ 10%	+101%	+ 4%	+ 2%	- 21%
1977	421	1,171	758	3,003	147	4,816
Change	+1,038%	- 20%	+160%	+ 28%	- 11%	+ 10%
1976	37	1,468	292	2,340	165	4,398
		Average Yearly Trade And Change				
1976-85	460	1,593	1,384	1,864	214	2,482
Change	+ 238%	+ 7%	+132%	+ 1%	+ 34%	- 5%

CANADA'S ALUMINUM MILL PRODUCTS

EXPORTS TO/IMPORTS FROM U.S.(GRAPH 11)



B. Mexico

1. Structure of the Mexican Aluminum Industry

The Mexican aluminum industry did not come into existence until 1940 when Alcoa opened up an extrusion plant. By 1945, both Alcan (then a subsidiary of Alcoa) and Reynolds had joined the industry with partial interest in a number of aluminum mill product plants. It was not until almost 2 decades later, however, that Mexico's first primary aluminum smelter went on stream. In 1960, Alumino S.A. de C.V. was formed by Alcoa (44%), Intercontinental S.A. (26%), and other Mexican interests (30%). The Vera Cruz smelter began production in 1963 with a capacity of 45,000 MTPY. Aluminio S.A. will increase Vera Cruz's capacity to 67,000 MTPY by September 1986.

In the 1960s and 1970s, a number of new aluminum mill product producers established plants in Mexico. In 1984 Alcan, the largest mill product producer, sold all its domestic interests to Grupo Aluminio (44% of which is owned by Alcoa). Grupo Aluminio and Reynolds Aluminio S.A. account for 68 percent of sheet and plate capacity, all foil capacity, and 59 percent of extrusion capacity. The only wire and cable producer is Conalum S. A.

2. Mexican Imports of Aluminum Products

Mexico has traditionally been a net importer of both primary aluminum and aluminum mill products, with the United States supplying over half of these imports. Between 1975 and 1984, imports of primary aluminum increased from 12,000 MT to 26,000 MT, with 61 percent coming from the United States.

Imports of aluminum mill products experienced the same basic pattern as those of primary aluminum. Between 1975 and 1981, imports increased from 33,000 MT to 83,000 MT. By 1984, imports had dropped to 13,000 MT, with the United States supplying 66 percent.

Mexico's tariff rates range from 10 percent for aluminum tubes to 40 percent for aluminum plate, sheet, bar, rod, wire, foil, and pipe, with all other products falling in between these two extremes. A special, substantially reduced tariff is applied for Venezuelan and Bolivian imports.

3. Mexican Exports of Aluminum Products

Mexico exported 1,000 MT of aluminum mill products in 1975. This increased to 8,000 MT in 1984, with the U.S. share increasing from 2 to 36 percent. The annual change of exports to and imports from the United States between 1976 and 1985 is shown in table 16 and graph 12.

TABLE 16
MEXICO'S ALUMINUM MILL PRODUCT EXPORTS TO AND IMPORTS FROM THE U.S., AND ANNUAL CHANGE, BY PRODUCT, 1976-1985
(Metric Tons)

	ALUMINUM MILL PRODUCTS		ALUMINUM SHEET AND PLATE		ALUMINUM ROD AND BAR	
Year	Exports To US	Imports From US	Exports To US	Imports From US	Exports To US	Imports From US
1985	1,631	24,175	1,237	17,965	27	2,268
Change	- 41%	+ 6%	- 46%	+ 1%	+26H%	+ 4%
1984	2,743	22,914	2,306	17,795	1	2,191
Change	+396%	+ 168%	+10H%	+ 316%	- 98%	- 8%
1983	553	8,537	204	4,276	43	2,368
Change	+129%	- 76%	+ 87%	- 79%	- 80%	- 76%
1982	241	35,197	109	20,763	217	9,974
Change	+ 45%	- 33%	+110%	+ 21%	+362%	- 61%
1981	166	52,268	52	17,172	47	22,265
Change	- 6%	+ 47%	- 40%	+ 29%	+ 34%	+ 138%
1980	176	35,641	86	13,356	35	10,613
Change	+ 80%	+ 24%	- 85%	+ 5%	- 5%	+ 27%
1979	860	28,786	579	12,720	37	8,336
Change	- 38%	+ 24%	- 54%	+ 36%	+363%	- 2%
1978	1,380	23,185	1,253	9,371	8	8,467
Change	+308%	+ 44%	+472%	- 8%	+100%	+ 234%
1977	338	16,121	219	10,179	4	2,532
Change	+289%	- 40%	+21K%	- 8%	+ 0%	- 80%
1976	87	26,982	1	11,059	0	12,493
			Average Yearly Trade And Change			
1976-85	818	27,381	605	13,462	42	8,452
Change	+123%	+ 18%	+26H%	+ 35%	+364%	+ 20%

TABLE 16--Continued

MEXICO'S ALUMINUM MILL PRODUCT EXPORTS TO AND IMPORTS FROM THE U.S., AND ANNUAL CHANGE, BY PRODUCT, 1976-1985

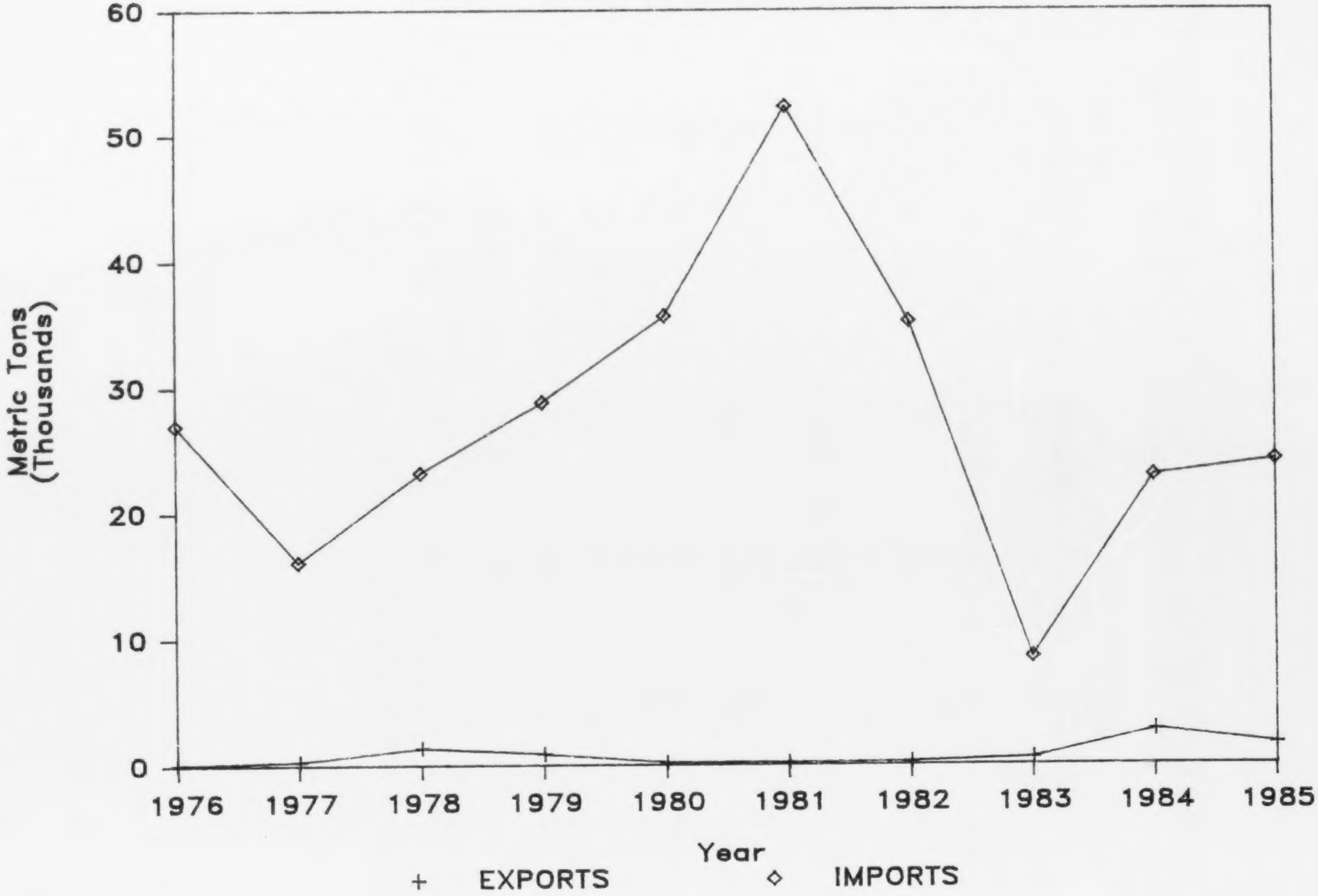
(Metric Tons)

Year	ALUMINUM WIRE AND CABLE		ALUMINUM FOIL		ALUMINUM PIPE AND TUBE	
	Exports To US	Imports From US	Exports To US	Imports From US	Exports To US	Imports From US
1985	12	1,040	3	351	39	1,238
Change	- 89%	+123%	+0%	+ 77%	+ 0%	+ 46%
1984	113	4,664	0	198	0	848
Change	- 59%	+ 48%	+0%	- 23%	+ 0%	+ 71%
1983	272	315	0	258	0	496
Change	+ 0%	- 83%	+0%	- 62%	-100%	- 48%
1982	0	1,829	0	676	5	962
Change	-100%	- 71%	+0%	- 29%	- 92%	- 32%
1981	1	6,347	0	961	63	1,422
Change	+ 0%	- 9%	+0%	- 49%	+ 15%	- 8%
1980	0	7,061	0	1,877	55	1,537
Change	-100%	+ 70%	+0%	+ 93%	- 47%	- 3%
1979	6	4,163	0	974	103	1,582
Change	+ 0%	+ 93%	+0%	- 40%	+ 5%	+ 55%
1978	0	2,155	0	1,622	98	1,022
Change	+ 0%	+ 75%	+0%	+ 73%	+ 31%	+ 13%
1977	0	1,233	0	938	75	902
Change	+ 0%	+ 94%	+0%	- 32%	- 12%	+ 5%
1976	0	636	0	1,375	85	858
Average Yearly Trade And Change						
1976-85	40	2,530	0	923	52	1,087
Change	- 39%	+ 38%	+0%	+ 1%	- 22%	+ 11%

Source: Aluminum Association

MEXICO'S ALUMINUM MILL PRODUCTS

EXPORTS TO/IMPORTS FROM U.S.(GRAPH 12)



II. SOUTH AMERICA

A. Argentina

1. Structure of the Argentine Aluminum Industry

Since 1975, the Argentine aluminum industry has been integrated from the production of primary aluminum to aluminum mill products, with the raw materials coming from Alcoa of Australia. Prior to the mid-1970s, aluminum mill products producers had to rely on imports for aluminum ingot. The first mill product plant was established in 1917 by the Italian firm Pirelli to produce wire and cable. Between 1930 and 1960, the majority of the other major mill product producers started production, but it wasn't until 1975 that Argentina's smelter finally came on stream with a capacity of 140,000 MTPY. In 1986, this smelter increased its capacity to 146,000 MTPY.

Aluar purchased the largest aluminum mill product producer, Kicsa, from Kaiser in 1983 with the goal of vertically integrating its aluminum industry. By April 1985, Kicsa had doubled its capacity for extrusions to 16,000 MT. An equally large producer is Camea (owned by Pechiney and Alcan). These two producers account for 80 percent of Argentina's sheet and plate capacity and 66 percent of the aluminum foil capacity. Camea and Pirelli own Filpa (a wire, cable and extrusions producer). Camea, Kicsa and Filpa account for 87 percent of all aluminum extrusion capacity and 49 percent of wire and cable capacity.

Since 1972, Argentina has shifted from a net importer of aluminum to a net exporter. Domestic production supplies all domestic consumption of ingot and almost all domestic consumption of aluminum mill products. Domestic consumption is only now beginning to pick up after 5 years of military rule.

2. Argentine Imports of Aluminum Products

Between 1972 and 1982, the amount of aluminum mill products imported increased dramatically from 8,000 MT to 10,500 MT, but fell the following 2 years. By the end of 1984, aluminum mill product imports dropped to 907 MT, with the U.S. share amounting to 11 percent (103 MT).

a. Tariff Barriers

The Argentine tariff classification system (NADI) is aligned with the CCCN. Ad valorem duties are assessed on the c.i.f. (cost, insurance and freight) value of the imported merchandise. Current tariff rates range from 0 to 38 percent. Imports of capital goods for which an equivalent is not produced in the country generally have a tariff of 10 percent.

Some specialized aluminum shapes, plates, thin sheets and strips, tube and structures are not produced in Argentina and, therefore, have a 10 percent tariff rate.

Imports of products for which some local production exists generally are assessed a duty of 32, 35, or 38 percent. However, the high tariff rate is of litte importance since the majority of these items require an import license. The remaining aluminum mill products fall under the 30 percent tariff category.

b. Nontariff Barriers

The current Argentine import system is designed to facilitate imports needed by industry and to restrict imports of products considered nonessential or products that can be supplied locally. Imports are controlled primarily through a licensing process. In addition, there are tariffs and taxes that an importer must pay.

Import Licensing.--Importers must apply for an import license for each shipment into Argentina. This license is called "Declaracion Jurada de Necesidad de Importacion" or Declaration of the Need to Import. The licensing system is administered by the National Directorate for Importation of the Secretariat of Commerce. Although the application procedure has been simplified, considerable information is still required concerning the product, such as the description and the end-use.

Previously, three product lists were used to determine licensing approval procedures. The first list of products (List I) included consumer-oriented goods, luxuries, and products for which demand could be met by local production. Imports of products on this list were almost always prohibited. A second list of products (List II) consisted mainly of certain capital goods, chemicals, plastics, and spare parts. For products on this list, a license could be issued by the Secretariat of Commerce based on a favorable recommendation by a public/private advisory committee called the Honorary Advisory Commission on Imports. The third list did not apply to aluminum products. In the second half of 1984, the Argentine government in theory eliminated this list system. In practice, however, the government still reviews all imports and determines which products can and cannot be imported.

Import Taxes on Aluminum Mill Products.--Those aluminum mill products for which U.S. producers are able to obtain an import license are subject to a number of import taxes as follows:

a. A Statistical Tax for administrative purposes of 1.5 percent of c.i.f. value is collected on imports;

b. An Export Promotion Fund Tax of 0.5 percent of c.i.f. is collected on imports to finance an export promotion fund; and

c. A Merchant Marine Fund Tax of up to 20 percent of freight charges is assessed on imported goods, which is used to support the local shipbuilding industry.

"Buy National" Regulations.--Argentine "buy national" legislation was first enacted in 1963 (Law 5340/63) and amended in 1975 (Law 18875). The regulations compel the federal government, state enterprises, or private enterprises acting under contract to the state to buy goods produced in the country when such goods can be produced at a reasonable price. A reasonable price of a local product is considered less than the duty-paid value of the imported equivalent (including customs, duties, shipping, insurance, and other charges). If a duty is less than 25 percent, then a 25 percent duty would be used in making the price comparison. This 25 percent rule would not apply, however, to those aluminum mill products that have a 10 percent tariff because these products are not produced locally.

3. Argentine Exports of Aluminum Products

Prior to 1977, Argentina was a net importer of aluminum products. By 1977, Argentina's position was reversed becoming a net exporter of aluminum products. In that year Argentina exported 3,000 MT of aluminum products. By 1984 exports had increased to 60,000 MT. The Argentine aluminum industry was able to obtain this status in some measure through a combination of government subsidies and preferential GSP treatment by the United States.

One method the Argentine Government has used to promote aluminum and other exports has been to have importers help pay for the promotion of exports (the Export Promotion Fund Tax). U.S. and other aluminum producers who export their products to Argentina pay a 0.5 percent tax on their c.i.f. value. The money raised by this fund is used in promoting Argentine exports.

Prior to the formation of the GSP program in 1976, Argentine exports of aluminum mill products to the U.S. were almost nonexistent. By 1985, Argentina had risen to become the fifth largest supplier of aluminum mill products to the United States under the GSP program. While the United States has allowed almost all aluminum mill product imports from Argentina to come into the country duty-free, Argentina has virtually excluded all products that they produce domestically out of the country. Argentine exports under the GSP program between 1976 and 1985 are shown in table 17. Argentine exports to and imports from the United States during the same time period are shown in table 18 and graph 13.

TABLE 17
ARGENTINA'S ALUMINUM MILL PRODUCTS EXPORTS TO THE U.S. UNDER GSP, 1976-1985
(Metric Tons)

Year	GSP Exports	% of Total Exports
1985	4,583	99%
1984	4,875	99%
1983	4,701	98%
1982	3,825	100%
1981	602	97%
1980	0	0%
1979	1,294	97%
1978	632	99%
1977	413	97%
1976	49	73%

TABLE 18

ARGENTINA'S ALUMINUM MILL PRODUCT EXPORTS TO AND IMPORTS FROM THE U.S., AND ANNUAL CHANGE, BY PRODUCT, 1976-1985

(Metric Tons)

	ALUMINUM MILL PRODUCTS		ALUMINUM SHEET AND PLATE		ALUMINUM ROD AND BAR	
Year	Exports To US	Imports From US	Exports To US	Imports From US	Exports To US	Imports From US
1985	4,640	106	3,014	56	1,380	5
Change	- 61%	+ 3%	- 12%	+ 10%	+ 5%	- 76%
1984	4,936	103	3,407	51	1,312	21
Change	+ 3%	- 66%	- 17%	- 62%	+116%	- 36%
1983	4,787	306	4,113	135	608	33
Change	+ 25%	- 22%	+ 14%	- 22%	+212%	- 20%
1982	3,826	390	3,602	173	195	41
Change	+517%	- 58%	+498%	- 73%	+ 0%	+ 0%
1981	620	924	602	629	0	41
Change	+ 0%	+ 16%	+ 0%	- 5%	+ 0%	+ 58%
1980	0	1,098	0	662	0	26
Change	-100%	+123%	-100%	+248%	+ 0%	+136%
1979	1,337	493	1,336	190	0	11
Change	+110%	+ 26%	+109%	+233%	+ 0%	+120%
1978	639	391	639	57	0	5
Change	+ 49%	- 12%	+138%	+ 39%	-100%	+400%
1977	427	445	268	41	157	1
Change	+537%	- 2%	+447%	- 72%	+824%	- 93%
1976	67	452	49	152	17	15
Average Yearly Trade And Change						
1976-85	2,128	471	1,703	214	367	20
Change	+126%	- 3%	+120%	+ 33%	+117%	+ 54%

TABLE 18--Continued

ARGENTINA'S ALUMINUM MILL PRODUCT EXPORTS TO AND IMPORTS FROM THE U.S., AND ANNUAL CHANGE, BY PRODUCT, 1976-1985

(Metric Tons)

	ALUMINUM WIRE AND CABLE		ALUMINUM FOIL		ALUMINUM PIPE AND TUBE	
Year	Exports To US	Imports From US	Exports To US	Imports From US	Exports To US	Imports From US
1985	137	26	34	3	53	1
Change	- 25%	+25H%	+ 0%	- 79%	+194%	- 50%
1984	183	1	0	14	18	2
Change	+221%	- 50%	-100%	+13H%	+ 0%	- 98%
1983	57	2	9	1	0	89
Change	+159%	- 97%	+ 50%	+ 0%	+ 0%	- 27%
1982	22	70	6	1	0	122
Change	+ 22%	+338%	+ 0%	- 99%	+ 0%	+ 53%
1981	18	16	0	155	0	80
Change	+ 0%	- 75%	+ 0%	+172%	+ 0%	- 63%
1980	0	64	0	57	0	215
Change	+ 0%	- 31%	+ 0%	- 93%	+ 0%	+ 90%
1979	0	93	0	807	0	113
Change	+ 0%	+92H%	+ 0%	+56H%	+ 0%	- 64%
1978	0	1	0	14	0	312
Change	-100%	- 94%	+ 0%	+ 0%	+ 0%	- 16%
1977	2	17	0	14	0	371
Change	+100%	+750%	+ 0%	+180%	+ 0%	+ 31%
1976	1	2	0	5	0	294

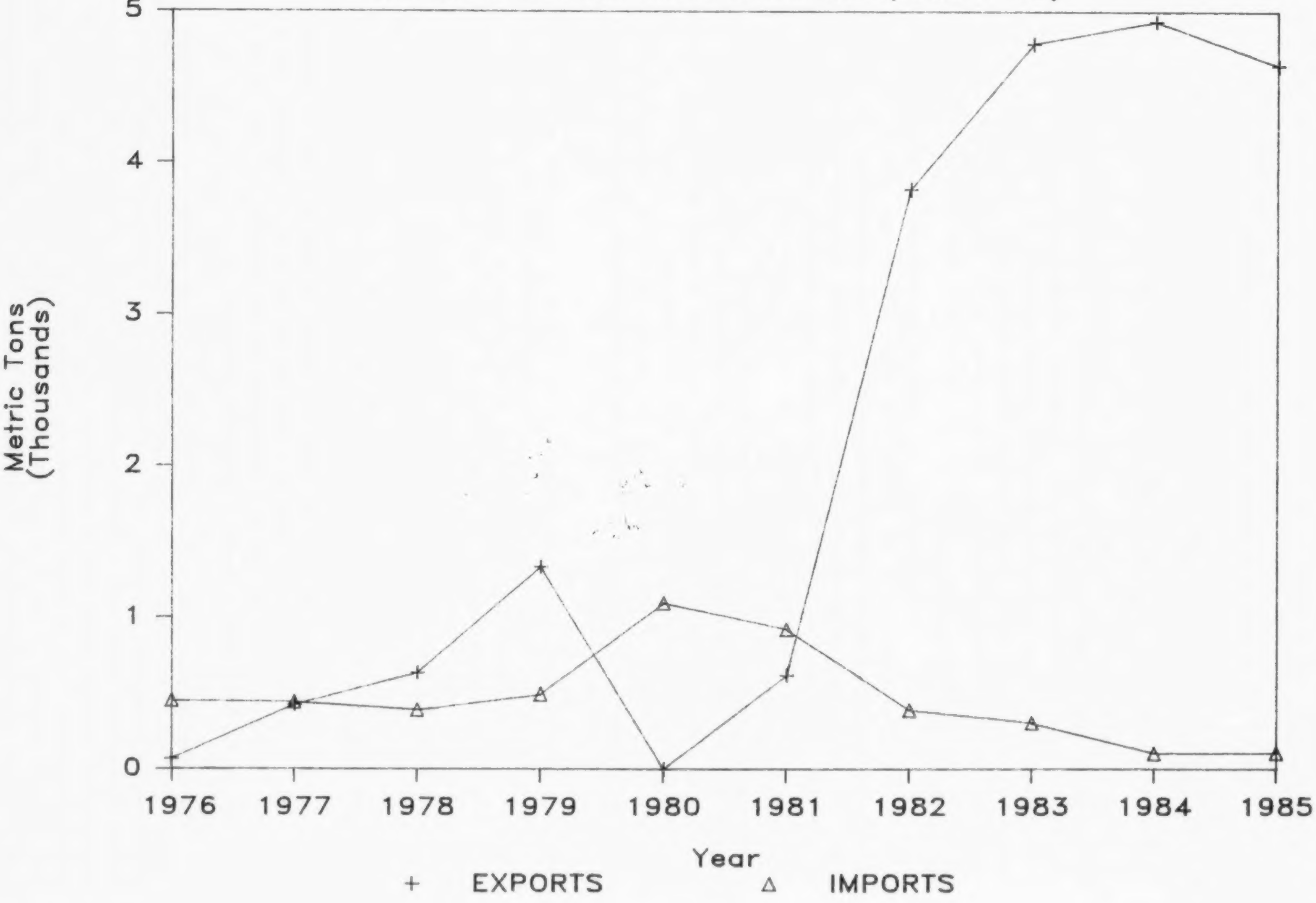
Average Yearly Trade And Change

Year	Exports To US	Imports From US	Exports To US	Imports From US	Exports To US	Imports From US
1976-85	42	29	5	107	7	159
Change	+ 42%	+14H%	- 6%	+783%	+ 22%	- 16%

Source: Aluminum Association

ARGENTINA'S ALUMINUM MILL PRODUCTS

EXPORTS TO/IMPORTS FROM U.S.(GRAPH 13)



B. Brazil

1. Structure of the Brazilian Aluminum Industry

In the past few years, the Brazilian aluminum industry has secured a very important position within the Brazilian economy. It now attracts the largest amount of private investment in the economy and is proceeding with the expectation that the international market will support a rapidly expanding industry. The industry's importance will further increase when a number of projects now planned or under construction are completed.

Brazil's Ministry of Industry and Commerce has a 10-year development plan for the nonferrous metals industry.1/ Its goal is to achieve a $1 billion nonferrous metals trade surplus by 1990. Investments of $13 billion are envisioned, and the plan's cornerstone is aluminum. About 40 percent of these investments are in projects currently under development. Primary aluminum production is targeted for 1.4 million MTPY in 1990 (from 455,000 tons produced in 1984), with exports of aluminum products of 600,000 MTPY valued at $1 billion. Criteria for this plan include the following:

a. Private enterprise will be the guiding force for development;

b. Brazilian firms are urged to make a special effort to assure local supply and independent action by Brazil on the international market with metals sold internationally by cartels;

c. Government involvement is justified to "promote the viability" of new projects and to help fund them when costs exceed the financing ability of Brazilian firms; and

d. Foreign investors should provide risk capital, arrange international financing to be repaid by exports of the project's products, use Brazilian goods and services, and transfer technology to Brazil.

Increased investment in the Brazilian primary aluminum industry is the result of the strong international competitive position of the Brazilian industry, aided by the country's large bauxite reserves, low-cost energy, and government sponsored incentives to encourage exports. At the end of 1984, Brazil became the fifth largest primary aluminum producer in the world (after the U.S., Canada, USSR, and Norway) with total production of 457,000 MT. As previously indicated, substantial

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1/ Engineering and Mining Journal, June 1982.

capacity expansion has been completed. Capacity expansion scheduled for the jointly-owned CVRD/Nippon Amazon Aluminium Co. (NALCO) will increase Brazil's primary aluminum capacity from 854,000 MTPY to 1.174 million MTPY by 1988.

There are a number of aluminum mill product producers in Brazil. The largest producer, Alcan Alumino do Brazil, is followed by Alcoa and CBA. These three producers account for 97 percent of sheet and plate capacity, all aluminum foil capacity, 57 percent of wire and cable capacity and 58 percent of extrusion capacity.

2. Brazilian Imports of Aluminum Products

Brazil is a net exporter of both primary aluminum and aluminum mill products. Imports of both have declined dramatically since 1980. In 1980, Brazil imported 47,000 MT of primary aluminum, with the largest shares coming from the United States (53 percent), Canada (25 percent), and Venezuela (17 percent). By 1984, imports of primary aluminum decreased to 5,000 MT, with one-third coming from Venezuela and two-fifths from the EEC.

Aluminum mill product imports decreased from 22,000 MT in 1980, with more than one-third coming from the United States, to 5,000 MT, with one-fourth coming from the United States in 1984.

a. Tariff Barriers

Brazilian tariff rates for aluminum mill products are extremely high compared with corresponding U.S. rates. The rates range from 45 percent for aluminum sheet to 60 percent for aluminum pipes and tubes.

The primary standard of valuation is the "normal price of the goods," which is the price at the time of importation, pursuant to a sale under conditions of "free competition" for delivery at the port of entry. Conditions of "free competition" are conditions in which the only payment to be made by the purchaser is the settlement of the sell price. The price must be established between the buyer and the seller for the purpose of the sell in question and must be independent of any other commercial or financial relations (contractual or otherwise). Documentation in the form of published catalogues or price lists must be submitted to substantiate the stated price.

While the invoice value is generally accepted as the dutiable value, Brazilian law provides two supplementary methods of valuation for use in special cases--a minimum value and a base price (both of which are used for various aluminum products). On specified products, such as thin aluminum foil, a minimum value established by the Customs Policy Council is used as the dutiable value unless the invoice value is higher. The Customs Policy Council has broad authority to establish minimum values upon which ad valorem duties are assessed. This authority has been exercised in cases of dumping, of significant price fluctuations, and of special need to protect domestic industry.

As Brazil prepares to enter GATT, it will begin implementing GATT's Customs Valuation Code and dismanteling its minimum value system. Brazil, however, is seeking a 3-year reservation period with respect to primary aluminum and aluminum powders.

In addition to the minimum value system, Brazilian law provides base prices (also referred to as reference or index prices). Whenever Brazilian production appears threatened by lower import prices or substantial price differences among several supplying countries, the Customs Policy Council may establish a base price, as they have with unwrought aluminum, which is determined from the normal wholesale price in the country of origin, from export prices to third countries, from production costs, or from c.i.f. import values. On entries for which the declared value is less than the established base price, a specific duty (equal to the difference between the declared value and the base price) is levied in addition to the usual ad valorem duty calculated on the base price.

b. Nontariff Barriers

Import Restrictions.--Import restrictions in Brazil are levied according to a policy that weighs a variety of factors affecting the economic well-being of the country. In general, the Brazilian government discourages or prohibits importation of consumer goods, products for which a domestically produced similar product exists, and "non-essential" goods. These policies apply to all primary aluminum and aluminum mill products. As production and export of these products has increased, imports have declined. The government is able to either discourage or eliminate imports through both tariff and nontariff barriers. With these measures, the Brazilian aluminum market is insulated from non-Brazilian competition.

Registration and License Requirements.--Before U.S. aluminum producers can export any items into Brazil, they must first register with the Foreign Trade Department (CACEX) of the Banco do Brazil. CACEX plays a central trade role through its implementation of directives issued by the National Council of Foreign Trade (CONCEX), one of the national trade policymaking bodies. Foreign aluminum producers wishing to export to Brazil must first register with CACEX. The producer must then apply for an import license, which allows him to proceed with the planned shipment to the Brazilian consumer. The products to be imported must comprise part of an approved annual company import program. If the product does not fall into this program, then the item may not be imported. Through CACEX, the Brazilian Government has suspended licenses to import insulated aluminum electrical wire and cable as well as a number of further processed products.

The "Law of Similars".--The Brazilian "Law of Similars" impedes importation of goods that are "similar" to items produced in Brazil. The law requires that a similarity test be conducted before granting an import license for imports that: (a) qualify for duty or tax reductions or exemptions; (b) receive exchange "benefits" (including foreign loans and foreign investment); (c) are made by Brazilian Government-owned entities; or (d) are to be leased or rented in another form. The majority of Brazil's imports are covered, particularly those produced by the state-owned entities that dominate the Brazilian economy.

Federal, state, and local governments are, in effect, required to "buy national." Theoretically, government agencies may purchase an imported item if the price of the national "similar" is 15 percent or higher than that of the import. However, political pressure makes it virtually impossible for government agencies to purchase foreign goods if a domestic product is available.

The primary criteria used in determining whether a domestic product is similar to a foreign product is when--

> there is equivalent quality and adequate specifications for end-use; the price is not greater than the cost of importation of the foreign good in national currency computed on the basis of "normal" price plus all import duties and insurance freight charges.

The law of similars makes it difficult for U.S. aluminum products to compete with their Brazilian-produced counterparts because the quality of many aluminum mill products are similar and the government is free to refuse the granting of an import license.

Taxes on Imports.--Foreign aluminum producers shipping to Brazil must pay an Industrial Products Tax (IPI). The IPI is levied on all imported aluminum products. The rate varies from 4 to 10 percent of c.i.f. for aluminum mill products.

The foreign aluminum producer must also pay the Merchandise Circulation Tax (ICM), which is a state government value-added tax levied on all transfers or movements of goods. The ICM tax on imports is calculated on 11 to 14 percent of c.i.f. plus the IPI tax. Brazilian exports are exempt from both of these taxes.

Other taxes levied on imports are as follows:

a. The Port Renovation Tax (3% over c.i.f). The proceeds are used for the improvement of port facilities;

b. A "Syndicate Fee" (2.2% of the c.i.f. value);

c. A "Brokerage Fee" (1% of the c.i.f. value);

d. A fixed fee for printed forms (currently $17);

e. A Mercantile Marine Tax (50% over freight);

f. Warehouse charges (first month-3% over c.i.f.);

g. Social benefits contribution (10% over warehouse charges);

h. A process handling charge (currently $20);

i. A "Forwarders Commission" (1.5% over c.i.f.); and

j. An "Administration Commission" (1.5% over c.i.f.).

3. Brazilian Exports of Aluminum Products

Brazilian exports of all aluminum mill products during the 1980's were several times the level of the 1970s, with more than one-third going to the United States by 1984. Virtually all U.S. imports from Brazil enter the U.S. duty-free under the Generalized System of Preferences. Brazil's aluminum mill product exports to and imports from the U.S. and the annual percentage change between 1976 and 1985 are outlined in table 19 and graph 14.

In Brazil, domestic demand for aluminum is small relative to production. As a result, the industry is dependent upon the export market to survive. About 40 percent of all domestic production is now exported. Such export dependence has necessitated a number of government actions to ensure that Brazil's exports are effectively promoted in the international marketplace. They include the following:

1. Exemption from the IPI tax, the ICM tax, federal income tax, and certain other taxes;

2. Export Credit Premium Program which provides exporters with a cash grant equivalent to 9 percent of the value of their exports. It has been reported that foreign governments have objected to this program on the basis that it is inconsistent with Brazil's commitments under the (GATT).

TABLE 19
BRAZIL'S ALUMINUM MILL PRODUCT EXPORTS TO AND IMPORTS FROM THE U.S., AND ANNUAL CHANGE, BY PRODUCT, 1976-1985
(Metric Tons)

	ALUMINUM MILL PRODUCTS		ALUMINUM SHEET AND PLATE		ALUMINUM ROD AND BAR	
Year	Exports To US	Imports From US	Exports To US	Imports From US	Exports To US	Imports From US
1985	8,204	1,097	1,700	689	2,332	209
Change	- 61%	- 43%	- 58%	- 22%	- 69%	+12H%
1984	20,483	1,908	4,021	887	7,569	16
Change	+ 13H%	+ 254%	+15H%	+133%	+15H%	- 33%
1983	1,480	539	249	381	472	24
Change	+ 429%	- 24%	+ 0%	- 8%	+ 0%	+ 26%
1982	280	707	249	415	0	19
Change	- 85%	- 72%	- 85%	- 68%	+ 0%	+ 0%
1981	1,821	2,504	1,646	1,296	0	0
Change	+ 177%	- 74%	+17H%	- 70%	+ 0%	-100%
1980	841	9,469	92	4,317	0	36
Change	- 28%	+ 2%	- 35%	- 13%	+ 0%	- 42%
1979	1,169	9,335	142	4,962	0	62
Change	+ 50H%	- 11%	+ 0%	+ 38%	+ 0%	- 2%
1978	23	10,497	0	3,589	0	63
Change	+ 0%	- 49%	+ 0%	+ 52%	+ 0%	+350%
1977	0	20,481	0	2,366	0	14
Change	+ 0%	+ 166%	+ 0%	- 19%	+ 0%	- 96%
1976	0	7,687	0	2,931	0	387
		Average Yearly Trade And Change				
1976-85	3,466	6,452	810	2,183	1,037	83
Change	+ 740%	+ 17%	+336%	+ 2%	+159%	+150%

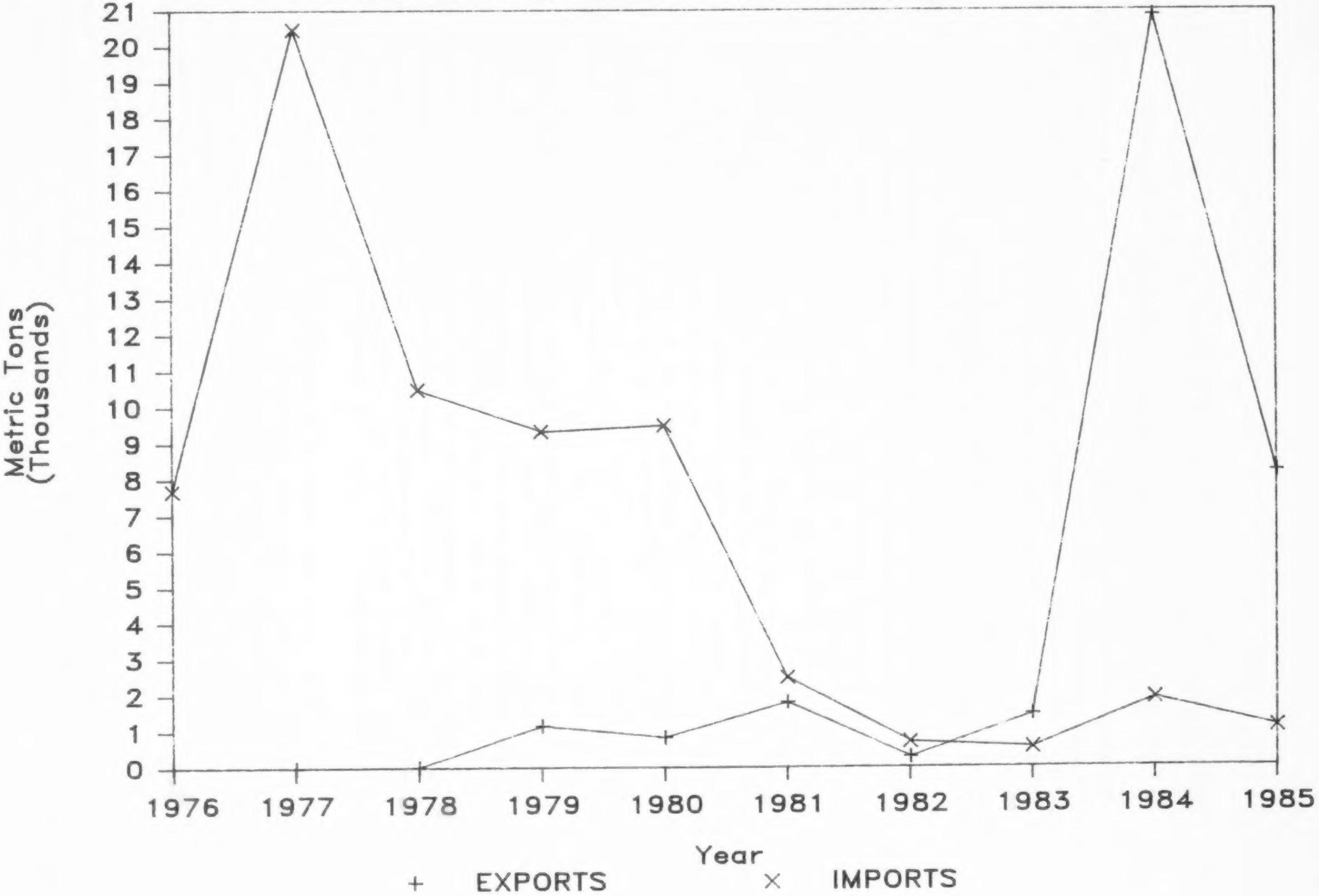
TABLE 19--Continued
BRAZIL'S ALUMINUM MILL PRODUCT EXPORTS TO AND IMPORTS FROM THE U.S., AND ANNUAL CHANGE, BY PRODUCT, 1976-1985
(Metric Tons)

	ALUMINUM WIRE AND CABLE		ALUMINUM FOIL		ALUMINUM PIPE AND TUBE	
Year	Exports To US	Imports From US	Exports To US	Imports From US	Exports To US	Imports From US
1985	603	28	869	11	226	18
Change	- 81%	- 96%	- 67%	- 48%	- 89%	- 14%
1984	3,125	731	2,627	21	2,028	21
Change	+15K%	+ 136K	+11H%	+950%	+ 0%	+ 31%
1983	21	2	218	2	0	16
Change	+ 0%	+ 100%	+17H%	- 96%	+ 0%	- 90%
1982	0	1	12	46	0	160
Change	+ 0%	- 100%	- 84%	- 22%	+ 0%	+ 52%
1981	0	641	70	59	0	105
Change	+ 0%	+ 5%	- 85%	- 43%	+ 0%	+ 54%
1980	0	611	515	103	0	68
Change	+ 0%	- 10%	- 46%	+ 16%	+ 0%	+325%
1979	0	680	958	89	0	16
Change	+ 0%	- 74%	+43H%	- 89%	+ 0%	- 33%
1978	0	2,578	22	837	0	24
Change	+ 0%	- 82%	+ 0%	+ 76%	+ 0%	- 56%
1977	0	14,530	0	475	0	54
Change	+ 0%	+ 42K%	+ 0%	- 26%	+ 0%	+53H%
1976	0	34	0	638	0	1
			Average Yearly Trade And Change			
1976-85	375	1,984	530	228	225	48
Change	+16H%	+ 88H%	+755%	+ 80%	- 10%	+618%

Source: Aluminum Association

BRAZIL'S ALUMINUM MILL PRODUCTS

EXPORTS TO/IMPORTS FROM U.S.(GRAPH 14)



C. Venezuela

1. Structure of the Venezuelan Aluminum Industry

Venezuela's aluminum industry came into being in 1961 when the Guayana Development Corporation (CVG) and Reynolds International formed a joint venture (Aluminio del Caroni S.A., or Alcasa) that was majority state-owned. The first smelter was inaugurated in October, 1967, in Ciudad Guayana with a capacity of 12,000 MTPY of primary aluminum. By 1979 production capacity reached 120,000 MTPY.

A second state-owned aluminum company, Industria Venezolana de Aluminio C.A. (Venalum), was established in 1976 with Japanese equity participation and a purchase contract for Venezuelan aluminum for a 10-year period. By 1981 this company had a production capacity of 280,000 MTPY.

Both Venalum and Alcasa imported alumina as a raw material until April, 1983 when a third state-owned company, Interalumina, began production of alumina. This company was formed in 1975 when CVG and Alusuisse established a joint venture with the aim of establishing a 1 million MTPY alumina plant. The plant's full capacity was reached in 1984.

Bauxite for Interalumina is currently imported from Sierra Leone, Guayana, Suriname, and Brazil. There are plans, however, to develop a bauxite mine in Venezuela. The area known as Los Pijiguaos in central Venezuela contains proven deposits of 170-180 million MT of high-grade bauxite with additional probable reserves of 500 million to 1 billion MT. A fourth state-owned company, Bauxiven, owned and controlled by CVG, was established in 1977 to mine the bauxite deposits. Open pit mining at the Los Pijiguaos project is expected to start in the second half of 1986, with full production of 4 million MTPY by 1990.

Until 1978, CVG was solely responsible for the developlment of the aluminum industry. Since then, the Venezuelan Investment Fund (FIV), created in 1974, has gradually taken over much of this control. Through these two institutions, FIV and CVG, most of Venezuela's aluminum industry is under direct government ownership and management.

These developments have made Venezuela one of the top 10 world producers of primary aluminum and one of the leading exporters. Venezuela's position will be further augmented when planned capacity increases be Alcasa and Venalum are realized by 1990.

Alcasa is currently expanding several aluminum mill product production facilities as well as its main aluminum smelting plant. The expansion program is divided into four phases and will be financed in large part from export earnings. Phases I and II were the construction of a 9,000 MTPY aluminum foil production line at the Guacara rolling mill and a 12,000 MTPY hard alloy sheet facility. These facilities were completed at the end of 1984 and mid-1985, respectively.

The third phase, also located in Guacara, will expand soft alloy sheet production to 9,000 MTPY in 1986. Once soft alloy sheet production is concentrated in the Guacara rolling mill with completion of the third phase, Alcasa will convert the Puerto Ordaz rolling mill, in phase IV, to produce 13,000 MTPY of can stock.

The FIV and a syndication of local banks have injected over 165 million bolivars into the expansion. In addition, foreign credits reportedly totalling over $21 million, including EXIMBANK financing of $13.6 million, have been approved.

In addition, a feasibility study was completed in 1985 for a facility to produce 150,000 MT of can stock annually. If the facility were to be completed, two-thirds of its output would be destined for the export market.

2. Venezuelan Imports of Aluminum Products

Venezuela is a net exporter of both primary aluminum and aluminum mill products. Aluminum mill product imports have remained at a fairly constant, low level since 1980. Between 1980 and 1984, imports decreased from 24,000 MT to 21,000 MT. These imports were predominantly aluminum can sheet or other items not manufactured domestically, with almost the entire amount imported from the United States, the EEC, and Japan.

a. Tariff Barriers

Venezuela's trade policy was relatively liberal prior to 1983, although certain imports required licenses and others were prohibited. Through a series of presidential decrees starting in February 1983, however, this trade policy was altered as part of an economic adjustment program intended to improve the country's balance of payments and foreign currency reserves position. Import restrictions were imposed, including prohibitions, licensing requirements, government import monopolies, and increased duties. In addition, the government's administration of available foreign currency has served as another means of controlling imports.

Tariffs on aluminum mill products imported into Venezuela are high. The highest rates are for aluminum foil (with no backing) and aluminum pipes and tubes. For these products, a U.S. aluminum mill product exporter would pay 70 percent ad valorem if allowed entry into the Venezuelan market. The tariff rate for aluminum sheet, plate, bar, rod, and wires is 60 percent ad valorem. The rate for backed aluminum foil, at 35 percent ad valorem, is far higher than the U.S. rate.

b. Nontariff Barriers

The government eliminated most import licensing in 1973 but restored it in 1982. The government now controls imports more closely to limit entry of a given product to the level necessary to close the gap between local production and demand. Licensing has been resumed for a large number of products, and the list is expanding. In an attempt to preserve the country's foreign currency reserves and improve its balance of payments, the Venezuelan Government has added many items to its list of products reserved for the exclusive import of the National Executive. This list generally includes luxury goods, household and consumer goods, goods considered "nonessential" by the government, and, more important, locally manufactured goods. These regulations constitute a de facto licensing system, for they allow the government to control imports it considers to be in competition with local production. This government regulation has been especially detrimental to U.S. aluminum mill products exporters, since the Venezuelan Government has placed special importance on the local aluminum industry as an export earner. As of 1984, primary aluminum, thin sheets and strips of aluminum and plates, bars, shapes, pipes, and similar items, of aluminum prepared for use in construction have fallen under this category. Other products are likely to follow, as domestic production of these products increases.

3. Venezuelan Exports of Aluminum Products

Venezuela's total exports of aluminum mill products since 1982 are not available, but it is known that exports to the United States have increased substantially since 1980, while imports from the United States, except for items not produced domestically, have ceased to enter the country. Most of the aluminum mill products exported to the United States have been aluminum rod, bar and wire. Venezuelan aluminum mill product exports to and imports from the United States and the annual change between 1976 and 1985 is shown in Table 20 and Graphs 15 and 16.

In 1984 Venezuela, with the help of government incentives (which will be discussed below) and currency devaluations, became the fourth largest foreign supplier of aluminum mill products to the U.S. market (assuming the EEC is a single entity). It was, by far, the largest supplier of rod and wire. Virtually all U.S. imports of aluminum mill products from Venezuela enter the U.S. duty-free under GSP. After replacing Yugoslavia as the largest importer under the GSP program in 1981, Venezuela maintained this position (with the exception of 1982) through 1985. In 1985 Venezuelan GSP shipments accounted for 61 percent of all GSP aluminum mill product imports and 11 percent of aluminum mill products imports from all sources.

TABLE 20
VENEZUELA'S ALUMINUM MILL PRODUCT EXPORTS TO AND IMPORTS FROM THE U.S., AND ANNUAL CHANGE, BY PRODUCT, 1976-1985
(Metric Tons)

	ALUMINUM MILL PRODUCTS		ALUMINUM SHEET AND PLATE		ALUMINUM ROD AND BAR	
Year	Exports To US	Imports From US	Exports To US	Imports From US	Exports To US	Imports From US
1985	56,828	5,758	2,000	4,467	47,392	260
Change	+ 52%	- 38%	- 76%	- 48%	+ 161%	+22H%
1984	37,347	9,295	8,392	8,641	18,176	11
Change	+ 456%	+ 83%	+48H%	+ 73%	+ 211%	- 15%
1983	6,712	5,086	169	4,993	5,854	13
Change	+ 12H%	- 25%	+14H%	- 17%	+ 11H%	- 92%
1982	510	6,761	11	6,012	499	169
Change	- 96%	- 56%	- 96%	- 57%	- 96%	- 97%
1981	11,582	15,442	265	13,992	11,316	86
Change	+ 210%	- 11%	+26K%	- 2%	+ 203%	+ 32%
1980	3,740	17,415	1	14,271	3,740	65
Change	- 66%	+ 102%	+ 0%	+ 130%	- 62%	+550%
1979	10,967	8,267	1	6,206	9,777	10
Change	+ 165%	- 1%	+ 0%	+ 24%	+ 136%	- 98%
1978	4,143	8,679	1	5,001	4,412	629
Change	+ 154%	+ 19%	+ 0%	+ 6%	+ 154%	- 47%
1977	1,632	7,323	0	4,730	1,632	1,182
Change	+ 54K%	+ 77%	-100%	+ 104%	+ 0%	+ 47%
1976	3	4,217	1	2,323	0	804
Average Yearly Trade And Change						
1976-85	13,347	8,859	1,084	7,064	10,253	323
Change	+ 63H%	+ 16%	+36H%	+ 24%	+ 198%	+304%

TABLE 20--Continued
VENEZUELA'S ALUMINUM MILL PRODUCT EXPORTS TO AND IMPORTS FROM THE U.S., AND ANNUAL CHANGE, BY PRODUCT, 1976-1985
(Metric Tons)

	ALUMINUM WIRE AND CABLE		ALUMINUM FOIL		ALUMINUM PIPE AND TUBE	
Year	Exports To US	Imports From US	Exports To US	Imports From US	Exports To US	Imports From US
1985	6,715	57	14	596	157	311
Change	- 52%	- 12%	+0%	+ 30%	+ 41%	+338%
1984	8,124	65	0	459	111	71
Change	+14H%	+160%	+0%	+11K%	+455%	+274%
1983	549	25	0	4	20	19
Change	+ 0%	- 86%	+0%	- 99%	+ 0%	+ 0%
1982	0	181	0	347	0	19
Change	+ 0%	- 9%	+0%	- 67%	+ 0%	+ 67%
1981	0	198	0	1,042	0	57
Change	+ 0%	- 77%	+0%	- 43%	+ 0%	+ 30%
1980	0	865	0	1,819	0	44
Change	-100%	- 30%	+0%	+ 94%	+ 0%	- 70%
1979	1,198	1,230	0	937	0	145
Change	+ 0%	+ 2%	+0%	+ 71%	+ 0%	- 1%
1978	0	1,201	0	547	0	147
Change	+ 0%	+469%	+0%	- 37%	+ 0%	- 36%
1977	0	211	0	861	0	231
Change	-100%	+ 15%	+0%	+ 52%	+ 0%	+ 29%
1976	2	183	0	568	0	179
			Average Yearly Trade And Change			
1976-85	1,659	422	1	718	29	122
Change	+129%	+ 48%	+0%	+13H%	+ 55%	+ 55%

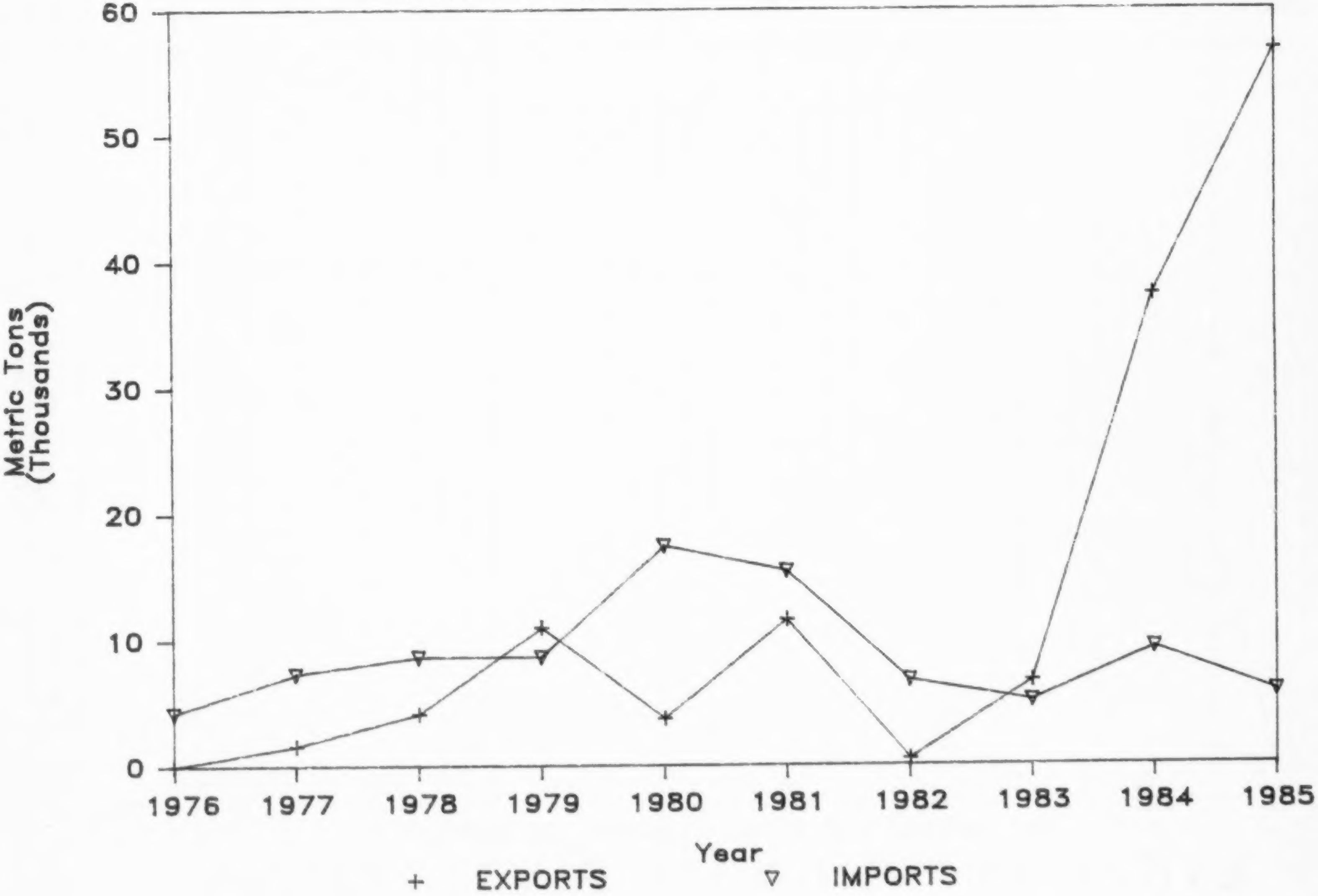
Source: Aluminum Association

a. Financial Incentives to Export

The Venezuelan Ministry of Development encourages industries that produce substitutes for imports of industrial raw materials and intermediate products (especially items where aluminum plays an important role, such as construction materials and automobile components) and those with export potential through tax incentives. Products with at least 40 percent local value added receive a 10 percent tax rebate. Rebates increase with the level of local value added and reach 25 percent for over 70 percent local value added.

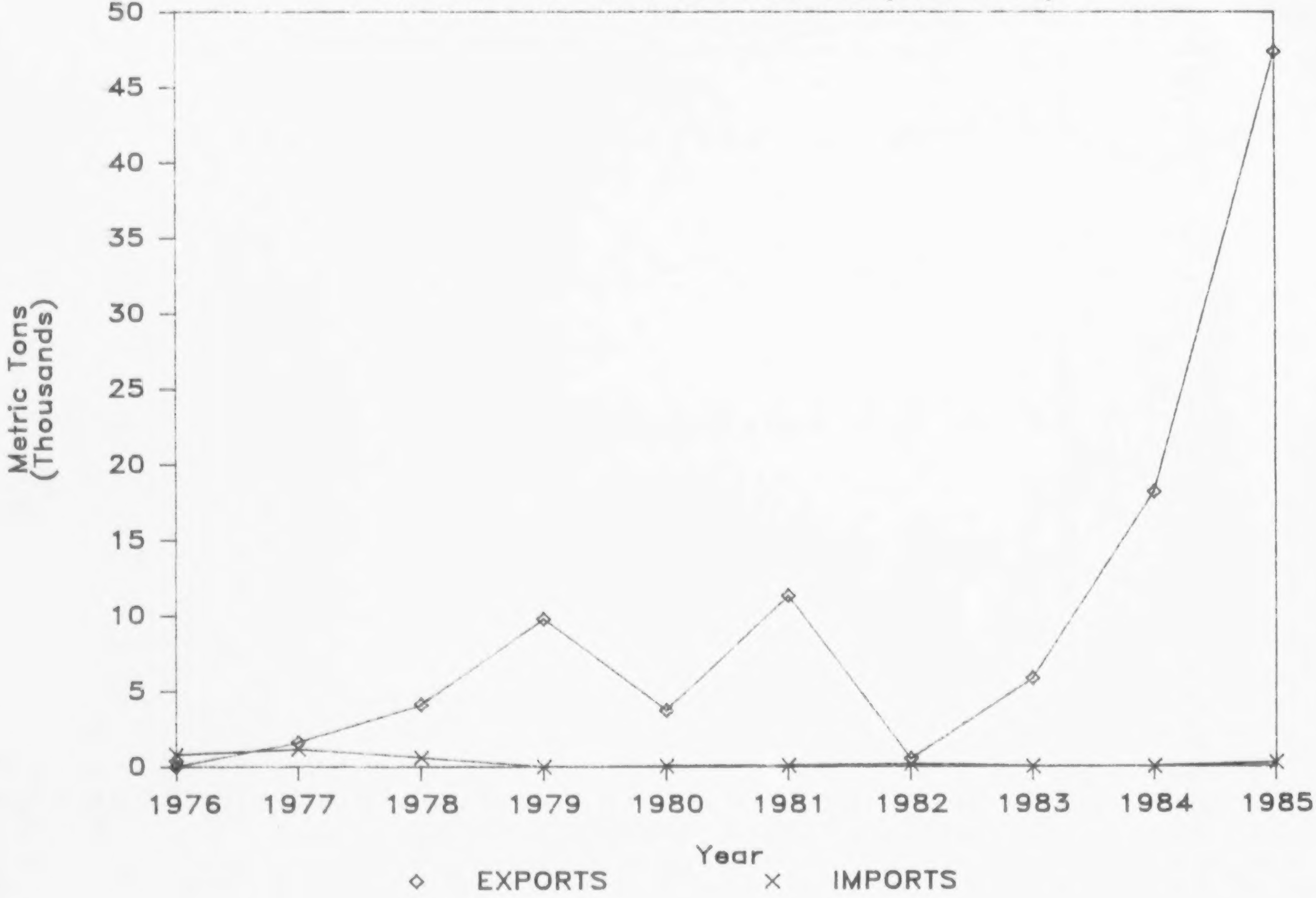
VENEZUELA'S ALUMINUM MILL PRODUCTS

EXPORTS TO/IMPORTS FROM U.S.(GRAPH 15)



VENEZUELA'S ALUMINUM ROD/BAR

EXPORTS TO/IMPORTS FROM U.S.(GRAPH 16)



A series of decrees in 1982 expanded tax incentives for the domestic capital goods industry, as follows:

1. Decree 1384 established a 20 percent annual income tax cut over a 5-year period ending in 1987, as long as certain requirements were met, including a local-content stipulation of 30 percent.

2. New ventures were given a 50 percent tax cut for the first 7 years of operation in the country.

3. An additional 20 percent tax rebate was offered on investment in new fixed assets for the manufacturing of capital goods.

4. Complementary decree 1374 offered firms a 14 percent tax rebate on investments in new fixed assets destined for the manufacture of capital goods used in the transportation and construction industries.

5. Decree 1776 expanded coverage of capital goods eligible for the incentives from 151 to 180 categories and specified that companies producing goods of "national design or technology" could receive a tax exemption of 50 percent of net profits. The 20 percent tax rebated for new investment in fixed assets was raised to 30 percent. [1]

These numerous decrees have been essential for the local aluminum industry in its effort to increase production capacity of products already produced and to expand into the production of new products. In effect, the government, through tax incentives and other tariff and non-tariff barriers, has sought to insure that foreign exporters of aluminum mill products will be unable to compete with local producers.

b. Subsidies to Exporters

The Venezuelan Government offers export incentives in the form of negotiable tax-free export bonds. It has established the Export Financing Fund (Finexpo) to ensure that items (such as aluminum) that are destined for export remain competitive in the international market.

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[1] Practices such as these five decrees enabled ALCASA to acheive a 20% return on sales, after taxes, in 1985 which made it one of the most profitable major aluminum mill products producers.

Venezuelan companies are offered export bonds, freely negotiable instruments, that may be used to pay taxes. They are valid for 2 years and range in value from 11 percent to 30 percent of the net f.o.b. (free on board) value of nontraditional exports. The exact amount of the value of the bond varies with the local content formula in table 21.

TABLE 21
VENEZUELA'S LOCAL CONTENT BOND FORMULA

Local Content	Bond Value
30-44.9%	11%
45-59.9%	16%
60-69.9%	20%
70-79.9%	23%
80-89.9%	26%
90-99.9%	29%
100%	30%

In order to qualify for export bonds, firms must either be locally owned or have signed an agreement to become locally-owned within a specified period of time. Indirect exporters, such as Alcasa and Venalum in their sales to Suramericana de Aleaciones Laminados (Sural) that are upgraded and then exported, are also entitled to export bonds, as long as they meet the 30 percent local content criterion. Since aluminum mill products are nontraditional exports of Venezula, the industry has had no problems qualifying for export bonds.

To secure a loan from FINEXPO, a company must apply through the Central Bank. Such loans are granted for only 1 year, and interest rates average 5 percent plus standard bank charges, with a commercial bank required to match the financing from FINEXPO.

III. EUROPE

A. European Economic Community

1. Structure of the EEC's Aluminum Industry

The EEC was established in Rome in March 1957 for the purpose of creating a customs union among its member countries. The EEC provides for a common customs tariff, a common agricultural policy, and a joint transportation policy, all with the ultimate goal of free movement of goods, services, labor and capital within the member countries. Spain and Portugal, having joined the EEC in January 1986, are the only members allowed to impose tariffs on other member countries but they will phase out these intra-EEC duties by 1992. As a result of high tariff rates imposed by the EEC on the products of nonmember countries, rather than export, producers in these countries have found it necessary to produce within the EEC in order to compete effectively in that market.

The European Economic Community's aluminum industry differs from country to country in terms of development, integration, size, and level of government and multinational influence. Prior to World War I, four companies dominated the market by securing bauxite sources, power supplies, and market positions. These four were Aluminium Industries-Aktiengesellschaft (AIAG) in Switzerland; the Societe Electrometallurgique Francaise in France; the Societe Industrielle de l'Aluminium, also in France; and the British Aluminium Company. In 1917 Vereinigte Aluminiumwerke A.G., or VAW, was formed to operate new plants built during the war. By war's end the government was in complete control of VAW, which had established itself as the major aluminum producer in Germany.

In the post World War II period, considerable expansion occurred in the Western European aluminum market. The established producers expanded throughout the continent and new producers outside the continent began acquiring market share. Pechiney (which merged with Ugine Kuhlmann in 1971 and became Pechiney Ugine Kuhlmann) acquired interests in smelters in Greece, the Netherlands, Spain, and the United States. Alusuisse (formerly AIAG) built a smelter in Ireland and acquired interest in smelters in Norway, Italy, West Germany, and New Zealand.

a. Belgium and Luxembourg

Both Belgium and Luxembourg lack primary aluminum production capacity and are dependent upon imports to supply the mill product producers. The majority of these imports come from other EEC members. Between 1980 and 1984, imports of primary aluminum increased 23 percent (from 253,000 MT to 312,000 MT).

Belgium has a large aluminum mill product industry and is a net exporter of these products. The largest aluminum mill product producer in Belgium is SA Sidal, which is partially controlled (27.6%) by the government. The Flemish regional government bought Pechiney's share of SA Sidal in 1983. The remainder of Sidal is owned by Estel Hoogovens of the Netherlands, who supplies to Sidal the bulk of its primary aluminum output. Sidal is the sole producer of hot-rolled aluminum sheet. Some of the sheet produced by Sidal is sent to Estel Hoogovens' B.V. Vaasen plant in the Netherlands, which uses it to produce packaging foil. Kaiser and Reynolds are the only aluminum foil producers in Belgium, Alcoa and BICC account for 94 percent of all wire and rod capacity and Sidal for more than one-third of aluminum extrusion capacity.

Luxembourg's only aluminum mill product producer, National Aluminum, went on line in 1985 and produces aluminum sheet, plate and foil. Production figures for Belgium between 1980 and 1984 are shown in table 22:

TABLE 22
BELGIAN ALUMINUM MILL PRODUCT
PRODUCTION, BY PRODUCT, 1980-1984,
(000 MT)

Product	1984	1983	1982	1981	1980
Sheet, plate, strip	N/A	N/A	140	129	119
Discs, circles	N/A	N/A	7	9	7
Rod, bar, section	N/A	N/A	51	47	58
Wire, cable	N/A	N/A	42	41	42
Pipe, tube	N/A	N/A	9	8	8
Total	295	273	249	234	234

Source: Institut National de Statistique.

Until 1969 Belgium was the EEC's leading exporter of mill products. In 1969, West Germany became the leading exporter of aluminum mill products, and France achieved an equal status with Belgium.

Between 1980 and 1984, Belgian imports of aluminum mill products increased 12 percent (from 84,000 MT to 94,000). Exports during the same period increased 27 percent (from 220,000 MT to 280,000 MT). More than 90 percent of the imports were from other EEC countries; 78 percent of the exports in

1980 and 67 percent in 1984 were destined for other EEC countries. Exports to the United States have substantially increased in recent years.

b. The Federal Republic of Germany (FRG)

From 1917 until the end of World War II, the German Government controlled the domestic aluminum market. Since the creation of the Federal Republic in 1949 and the EEC in 1957, however, a number of multinational and private domestic producers have entered the market. The industry is now one of mixed government and private ownership. There are nine primary aluminum smelters in the FRG. Of these, five are owned by either VAW or a local government.

Since the FRG has traditionally been a producer of semifinished and finished goods, the aluminum mill product industry has been far more successful than most of its EEC counterparts. Since 1975, it has maintained its position as a net exporter and the largest EEC producer of aluminum mill products. There are a relatively large number of aluminum mill product producers in the FRG. The two largest producers, Alcan and VAW, who jointly own the FRG's largest aluminum mill product company (Aluminium Norf GmbH) as well as their own operations, account for more than half of all aluminum sheet and foil capacity and half of all wire and cable capacity. These two producers, along with Alusuisse, Kaiser and Reynolds, account for almost all aluminum sheet, plate and foil capacity, while a number of producers make up the wire, cable, pipe and tube market.

The production of aluminum mill products in the FRG rose 13 percent between 1980 and 1984. During this same period, imports of aluminum mill products increased 4 percent, while exports increased 45 percent. Slightly less than three-fourths of all imports were provided from other EEC countries in both years; about two-thirds of the exports were destined for other EEC contries in 1980, and 59 percent in 1984. Production of aluminum mill products is outlined in table 23.

TABLE 23
THE FRG'S PRODUCTION OF ALUMINUM
MILL PRODUCTS, BY PRODUCT, 1980-1984,
(000 MT)

Product	1984	1983	1982	1981	1980
Sheet, plate, foil	788	758	678	643	637
Rod, bar, section	252	262	226	238	293
Wire, cable	65	71	65	65	72
Pipe, tube	28	27	26	25	270
Total	1,133	1,118	995	971	1,029

Source: Statistisches Bundesamt.

c. France

The French aluminum industry is the oldest in the world and the second largest Western European producer. The primary aluminum industry is monopolized by state-owned Pechiney, which is one of the six largest aluminum producers in the world. Conversely, the aluminum mill product industry consists of a mixture of government-owned firms, multinational companies, and small private local producers.

Pechiney was a privately owned aluminum producer until 1981, when the government acquired control of the company. Pechiney owns all of France's primary aluminum smelters, as well as the refineries that supply alumina to these smelters. The seven smelters operating at the end of 1984 had a combined capacity of 423,000 MT.

Pechiney accounts for almost 100 percent of all sheet, plate, and foil capacity, 61 percent of wire and cable capacity and one-half of extrusion capacity in France.

Production of aluminum mill products in France has increased at a steady rate during the 1980s. Between 1980 and 1984 production (shown table 24) increased by 10 percent.

TABLE 24
FRENCH PRODUCTION OF ALUMINUM MILL PRODUCTS, BY PRODUCT, 1980-1984, (000 MT)

Product	1984	1983	1982	1981	1980
Sheet, plate, strip	N/A	N/A	295	290	276
Rod, bar, section, tube	N/A	N/A	132	122	125
Wire	N/A	N/A	146	134	132
Total	586	631	573	546	533

Source: Federation des Chambres Syndicales des Metaux.

Both imports and exports also increased during this period--by 8 percent and 16 percent, respectively. More than 80 percent of the imports were from other EEC members. The quantity of imports from other EEC members declined from 62 percent of the total in 1980 to 59 percent in 1984.

d. Italy

The majority of the Italian primary aluminum and aluminum mill product industry is controlled by the government. The primary aluminum industry dates back to the Mussolini era, when the Societa Aluminio Vento per Azioni, SPA (SAVA) was founded by Alusuisse (50 percent) and the government-owned financial company, MCS-Italiano (50 percent) in 1926. After the expected closure of two Italian smelters late in 1986, smelting capacity will total 211,000 MT.

The largest aluminum mill product producer in Italy is the government-owned, MCS-Italiano. MSC is the sole owner of a number of aluminum mill product companies (the largest being Slim SpA, which was purchased from Reynolds in March 1986), as well as one other company jointly-owned with Alusuisse. Together, these two producers account for 66 percent of aluminum sheet and plate capacity, 75 percent of aluminum foil capacity, 83 percent of wire and cable capacity and almost 33 percent of extrusion capacity. MCS's major competitors are Alcan and Pechiney. These four producers combined account for over 90 percent of aluminum sheet and plate capacity. A large number of small producers account for the remainder of aluminum mill product capacity.

Since 1975, Italy's aluminum mill product industry has become a net exporter of aluminum mill products. Italy was able to maintain this position through 1984, even though production, at 462,000 MT, was at its lowest point of the 1980s and substantially below the relativaly high 1983 level of 512,000 MT. Production is outlined in table 25.

TABLE 25
ITALIAN ALUMINUM MILL PRODUCT
PRODUCTION, BY PRODUCT, 1980-1984
(000 MT)

Product	1984	1983	1982	1981	1980
Sheet, plate, strip	231	218	185	213	219
Rod, bar, section	201	201	224	173	205
Foil	1/	53	51	41	38
Wire, cable	30	20	11	22	25
Pipe, tube	1/	20	19	18	20
Total	462	512	490	467	507

1/ Included with rod, bar, section.
Source: Instituto Centrale di Statistica.

During the 1980-84 period, Italy's imports of mill products increased by 5 percent, and exports increased 36 percent. In 1980, 80 percent of these imports originated from other EEC countries, compared with 58 percent in 1984.

e. The Netherlands

The Dutch primary aluminum industry is young compared with those of other EEC-member countries. Its first smelter came on stream in 1966 and the second in 1970. These smelters have a combined capacity of 266,000 MT. The Netherlands has been a net exporter of primary aluminum since 1967. Much of such exports are to Belgium for conversion to sheet (some of which reentered the Netherlands for conversion to foil).

Although production of aluminum mill products has more than doubled since 1970 and continues to grow, the Netherlands remains a net importer. All of the Netherlands' aluminum mill product producers are either multinational companies or privately-owned domestic producers; none are government owned. Alcoa and Hunter Douglas Aluminium BV are the only aluminum sheet producers, while Estel Hoogovens BV and Hunter Douglas are the only aluminum foil producers. Reynolds, Alumax and Hunter Douglas account for almost three-fourths of aluminum extrusions capacity. There are no producers of aluminum wire and cable.

The majority of the Netherlands' mill product imports and exports occurred within the EEC framework. Between 1980 and 1984, the Netherlands' imports increased 3 percent (from 117,000 MT to 121,000 MT). During the same period, exports increased only slightly (from 106,000 to 108,000 MT).

f. The United Kingdom

The United Kingdom, which joined the EEC in 1974, has traditionally been the third leading producer of aluminum in the EEC, following the Federal Republic of Germany and France. British Alcan Aluminium is the largest producer of primary aluminum in the United Kingdom. Total capacity is currently 287,000 MT.

The largest producer of aluminum mill products is Alcan Aluminium (U.K.) Ltd., accounting for three-fourths of all sheet, plate, foil, wire and cable capacity and more than one-third of U.K. extrusion capacity. Alcoa is the only major competitor.

Shipments by the U.K. aluminum mill product producers have increased 5 percent during the last 5 years, from 348,000 MT to 367,000 MT. Imports, on the other hand, increased 59 percent (from 55,000 MT to 246,000 MT), three-quarters of which were imported from other EEC countries, up from two-thirds in 1980. Exports declined by 40 percent (from 185,000 MT in 1980 to 112,000 MT) in 1984. One-third of total U.K. exports went to other EEC countries in 1980, and by 1984 almost two-thirds went to other EEC members. Shipments of U.K. aluminum mill products are outlined in table 26.

TABLE 26
U.K. ALUMINUM MILL PRODUCT SHIPMENTS, BY PRODUCT, 1980-84, (000 MT)

Product	1984	1983	1982	1981	1980
Sheet, plate, strip	133	124	120	112	144
Foil	58	51	53	54	55
Rod, bar, section	135	136	123	124	133
Pipe, tube	10	12	14	13	16
Wire, cable	30	30	33	35	37
Total	366	353	343	338	385

Source: Aluminum Federation.

2. EEC Imports of Alumiunum Products

a. Tariff Barriers

About 75 percent of all EEC aluminum mill product imports come from intra-EEC trade. This figure has changed very little over time. For non-EEC countries, preferential tariff treatment (almost entirely duty-free) is extended to imports from the African, Caribbean, and Pacific developing countries, several French and Dutch territories, Turkey, members of the European Free Trade Association (EFTA) (Iceland, Norway, Finland, Sweden, Switzerland, and Austria), Egypt, Morocco, Tunisia, Algeria, Israel, Malta, Cyprus, Jordan, Lebanon, Syria, and Yugoslavia.

The EFTA countries account for the largest share of extra-EEC imports. Since 1980 this share has fluctuated from a low of 52 percent in 1983 a high of 70 percent in 1984. For those countries that receive no preferential tariff treatment, such as the United States, tariff rates are either 7 percent or 10 percent for all aluminum mill products.

b. Nontariff Barriers

In addition to high tariff rates for those countries receiving no preferential tariff treatment, an "import equalization tax" is levied at the rate of the value added tax (VAT) applicable to similar goods produced in EEC countries. This tax can be as high as 18 percent in France and 14 percent in the FRG. While intra-EEC and EFTA imports have increased their share of total EEC imports since 1980, the U.S. (with no preferential tariff treatment) has seen its share halved, from 6 percent to 3 percent. The major barrier to market access for U.S. aluminum mill products producers is the nationalistic procurement policies of many of the EEC countries that often own their own industry.

3. EEC Exports of Aluminum Products

Like imports of aluminum products, the majority of all EEC aluminum exports are intra-EEC shipments. Unlike imports, however, the majority of extra-EEC exports are not with EFTA countries. The share of exports of both unwrought and aluminum mill products to the United States has risen since 1980, but the increase has been much more dramatic for aluminum mill products. In 1984, the United States became the EEC's single largest export market for aluminum mill products. The U.S. share of extra-EEC exports has increased from 6 percent in 1980 to 15 percent in 1984. In absolute terms, exports to the U.S. increased from slightly more the 8,000 MT to more than 30,000 MT.

As previously indicated, all members of the EEC charge a VAT for items produced domestically. Importers pay this same rate in the form of an "import equalization tax." However, EEC exporters of aluminum products are exempt from paying the VAT. Some U.S. producers have questioned the legality of this practice under GATT.

The EEC's annual average of aluminum mill product imports to and exports from the United States between 1975 and 1984 are in table 27 and graphs 17 and 18.

TABLE 27
THE EEC's ALUMINUM MILL PRODUCT EXPORTS TO AND IMPORTS FROM THE U.S., AND ANNUAL CHANGE, BY PRODUCT, 1976-1985

(Metric Tons)

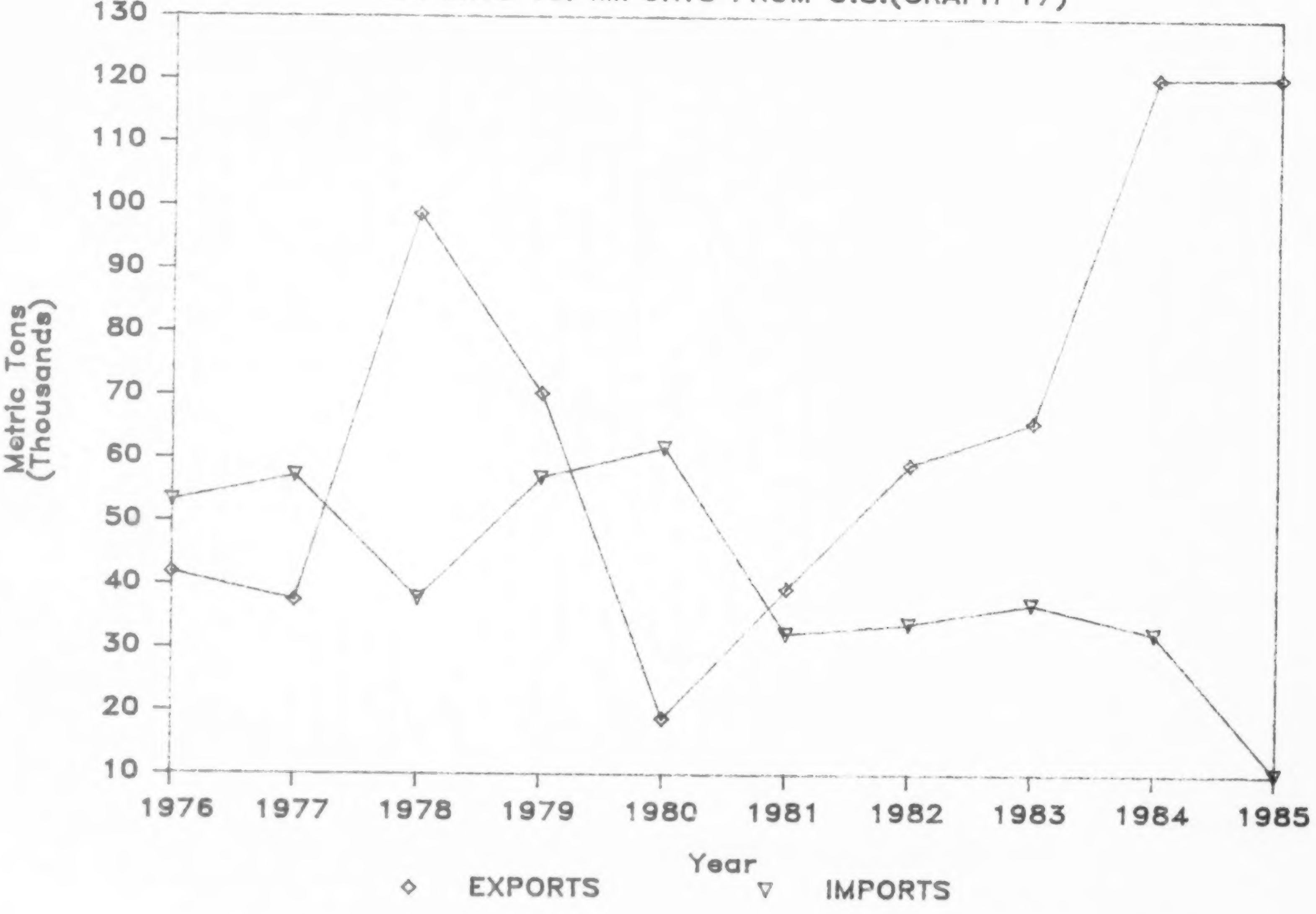
	ALUMINUM MILL PRODUCTS		ALUMINUM SHEET AND PLATE		ALUMINUM ROD AND BAR	
Year	Exports To US	Imports From US	Exports To US	Imports From US	Exports To US	Imports From US
1985	120,801	10,190	98,825	5,414	3,355	1,623
Change	+ 0.2%	- 69%	+ 0.2%	- 81%	- 24%	- 7%
1984	120,591	32,496	98,601	27,832	4,420	1,749
Change	+ 83%	- 13%	+ 88%	- 14%	+107%	- 14%
1983	65,967	37,148	52,586	32,411	2,136	2,025
Change	+ 12%	+ 9%	+ 6%	+ 11%	+ 64%	+ 10%
1982	59,164	33,991	49,495	29,299	1,300	1,844
Change	+ 50%	+ 5%	+ 54%	+ 10%	- 27%	- 29%
1981	39,431	32,364	32,069	26,661	1,775	2,595
Change	+ 109%	- 48%	+ 140%	- 39%	+112%	- 69%
1980	18,842	61,815	13,381	43,943	839	8,485
Change	- 73%	+ 9%	- 78%	- 5%	- 72%	+123%
1979	70,333	56,959	61,139	46,204	2,969	3,813
Change	- 29%	+ 50%	- 31%	+ 52%	+ 16%	+ 46%
1978	98,678	37,870	89,042	30,553	2,566	2,613
Change	+ 163%	- 34%	+ 185%	- 40%	+ 15%	+ 59%
1977	37,507	57,215	31,276	51,028	2,239	1,640
Change	- 10%	+ 8%	- 9%	+ 14%	- 27%	- 30%
1976	41,860	53,216	34,540	44,895	3,053	2,353
Average Yearly Trade And Change						
1976-85	67,317	41,330	56,095	33,824	2,465	2,874
Change	+ 34%	- 9%	+ 39%	- 10%	+ 18%	+ 10%

TABLE 27--Continued
THE EEC's ALUMINUM MILL PRODUCTS EXPORTS TO AND IMPORTS FROM THE U.S., AND ANNUAL CHANGE, BY PRODUCT, 1976-1985,
(Metric Tons)

	ALUMINUM WIRE AND CABLE		ALUMINUM FOIL		ALUMINUM PIPE AND TUBE	
Year	Exports To US	Imports From US	Exports To US	Imports From US	Exports To US	Imports From US
1985	1,117	354	9,591	332	1,118	138
Change	+ 59%	- 7%	- 19%	- 3%	+ 43%	-25%
1984	704	382	11,878	342	781	184
Change	+ 79%	- 8%	+ 47%	- 27%	+100%	+14%
1983	394	415	8,099	465	391	161
Change	+ 83%	- 47%	+ 48%	- 2%	+188%	+ 7%
1982	216	784	5,485	476	136	150
Change	+160%	+ 4%	+ 36%	- 31%	+ 30%	-62%
1981	83	752	4,028	689	105	394
Change	+655%	- 64%	+ 55%	- 84%	+ 11%	-54%
1980	11	2,111	2,582	4,418	95	854
Change	- 89%	+ 16%	- 49%	+ 69%	- 46%	+40%
1979	100	1,817	5,084	2,611	177	610
Change	- 61%	+ 39%	- 21%	+ 34%	+124%	-34%
1978	255	1,310	6,439	1,946	79	930
Change	+249%	+ 46%	+ 100%	- 13%	+ 27%	+72%
1977	73	898	3,224	2,243	62	540
Change	+ 38%	- 12%	- 18%	- 34%	+ 38%	- 4%
1976	53	1,024	3,962	3,401	45	562
		Average Yearly Trade And Change				
1976-85	301	985	6,034	1,692	299	452
Change	+130%	- 4%	+ 20%	- 10%	+ 57%	- 5%

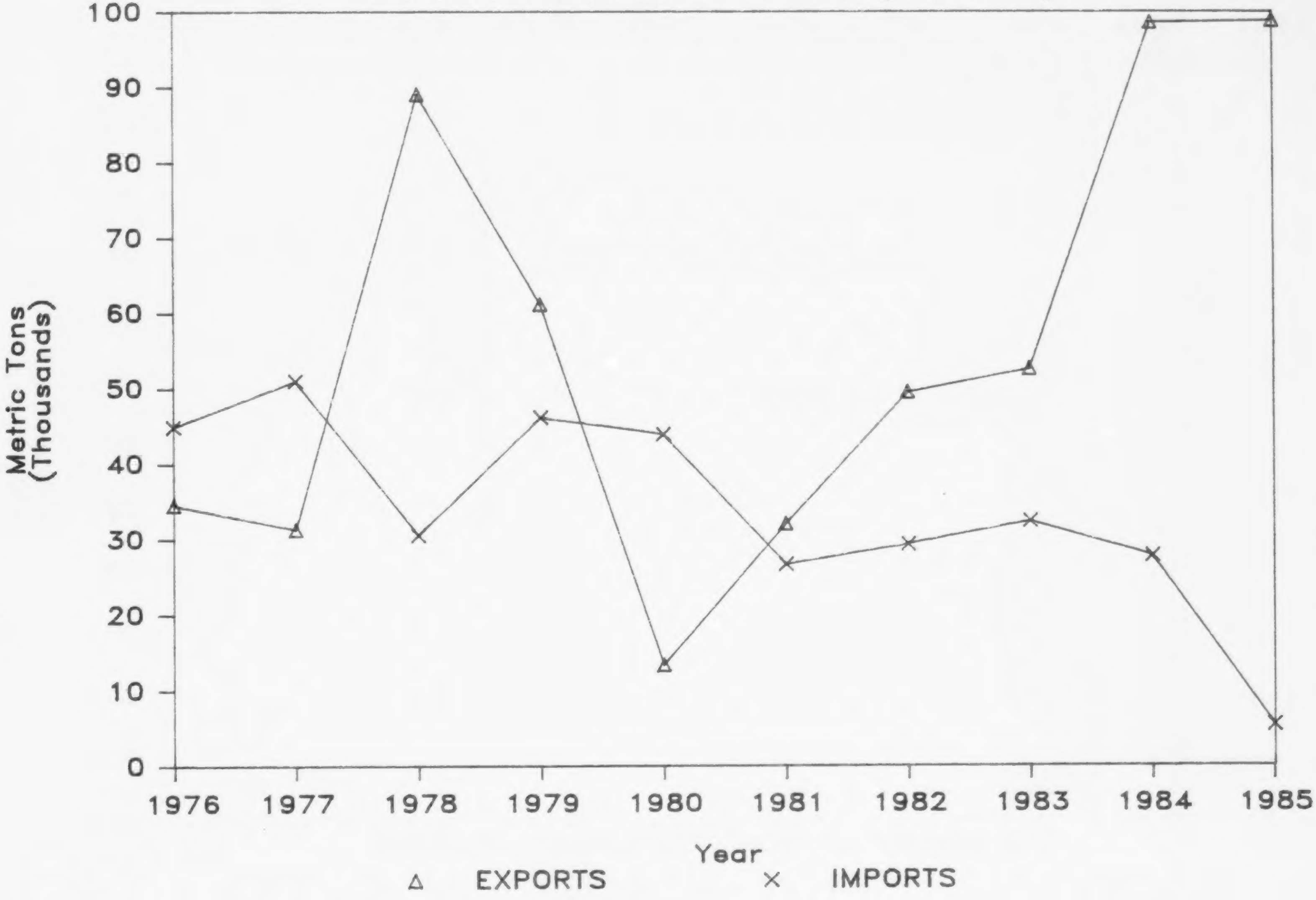
EEC'S ALUMINUM MILL PRODUCTS

EXPORTS TO/IMPORTS FROM U.S.(GRAPH 17)



EEC'S ALUMINUM SHEET/PLATE

EXPORTS TO/IMPORTS FROM U.S.(GRAPH 18)



B. Norway

1. Structure of the Norwegian Aluminum Industry

Norway is the second largest European producer of primary aluminum after the Federal Republic of Germany (F.R.G.), but it is behind the F.R.G., France, Italy, the United Kingdom and Belgium in the production of aluminum mill products. Unlike these other countries, however, Norway is a net exporter of both primary aluminum and aluminum mill products. Norway's large aggregate output, high standard of living, and relatively small population simultaneously result in Norway's per capita aluminum consumption (about 48 pounds in 1984) being the third highest in the world following the United States and the F.R.G. The Norwegian primary aluminum industry is the leading European and the second largest world exporter in 1984.

The Norwegian aluminum industry largely came into existence after World War II. Prior to this, there were only two small aluminum smelters in Norway. In 1947 the Norwegian Parliament resolved to complete aluminum smelters which the Germans had begun construction on during the war, and the government-owned A/S Ardal og Sanndal Verk (ASV) was established. Norway now has five primary aluminum producers operating eight smelters with a total capacity of 794,000 MT. Of these five producers, two are fully government-owned, two are partially government-owned and the fifth is privately-owned. During the early 1980s, attempts were made by the government to combine all of its aluminum holdings into one giant government-owned producer, to be known as Norsk Aluminium. These plans were cancelled by the conservative government elected in late 1981, but plans are again underway to merge ASV and Norsk Hydro.

The Norwegian aluminum mill products is less developed than the primary industry. In terms of production, it ranks much lower than the major European producers. ASV and Norsk Hydro are the only producers of aluminum sheet, plate and extrusions, with ASV accounting for 70 percent of total sheet and plate capacity and Norsk Hydro for 52 percent of extrusion capacity. There are four producers of aluminum wire and cable, but ASV and Norsk Hydro account for more than 70 percent of capacity. There is only one small producer of aluminum foil.

The pattern of Norwegian aluminum mill product production is shown in table 28, although a breakdown by product is not available.

TABLE 28
NORWAY'S ALUMINUM MILL PRODUCT PRODUCTION, 1980-84, (000 MT)

	1984	1983	1982	1981	1980
Total	135	150	122	121	119

Source: Statistisk Sentralbyra

2. Norwegian Aluminum Mill Product Imports

While Norway has been a net exporter of primary aluminum throughout the postwar period, it was a net importer of aluminum mill products prior to 1968. Since then the amount of aluminum mill product imports has increased at a gradual rate, but the ratio of imports to exports has widened considerably. While the U.S. share of Norway's aluminum mill product imports was never large, it decreased from 5 percent of a total 28,000 MT in 1976 to one-tenth of one percent of a total 46,500 MT in 1984. In 1984, the FRG was the single largest foreign supplier of Norwegian imports (accounting for 53 percent) and the EEC the largest group (accounting for three-quarters).

Norway's tariff is a single-column tariff using the Customs Cooperation Council Nomenclature (CCCN). For aluminum mill products, Norway has two different duty rates. One rate is for EFTA and EEC members, which is free for all products. The other rate applies to all countries receiving most-favored-nation treatment. The post January 1, 1987, rate, which U.S. producers must pay, is free on products not produced in significant quantity in Norway such as wire and wire rod, corrugated sheet, and aluminum powder and flakes. The rate on all other products will range from 5.8 percent on rods, bars, angles, shapes, pipes and tubes to 9 percent on all aluminum sheet and plate products other than corrugated sheet. Aluminum foil, on the other hand, is not charged a percent of cost, insurance and freight (c.i.f.). The rates on foil will be NOK1.88 per kilogram for embossed or printed foil and NOK0.75 per kilogram for all other foil.

3. Norwegian Aluminum Mill Product Exports

Norwegian exports of aluminum mill products have almost doubled from 45,000 MT in 1974 to 89,000 MT in 1984, after falling from an all time high of 103,000 MT in 1983. Aluminum sheet and plate accounted for 60 percent of all the 1984 exports. Almost one-half of these 1984 exports (which accounted for 66 percent of total production) went to the EEC, while 16 percent went to the United States.

A value added tax (VAT) is levied on all goods (both domestic and imported) at a rate of 20 percent. For imports, the VAT is levied on the c.i.f. duty-paid value of the imported product. All Norwegian exports (including aluminum mill products exports) are exempt from this VAT.

Aluminum mill product exports to and imports from the United States and their annual change between 1976 and 1985 are shown in table 29 and graphs 19 and 20.

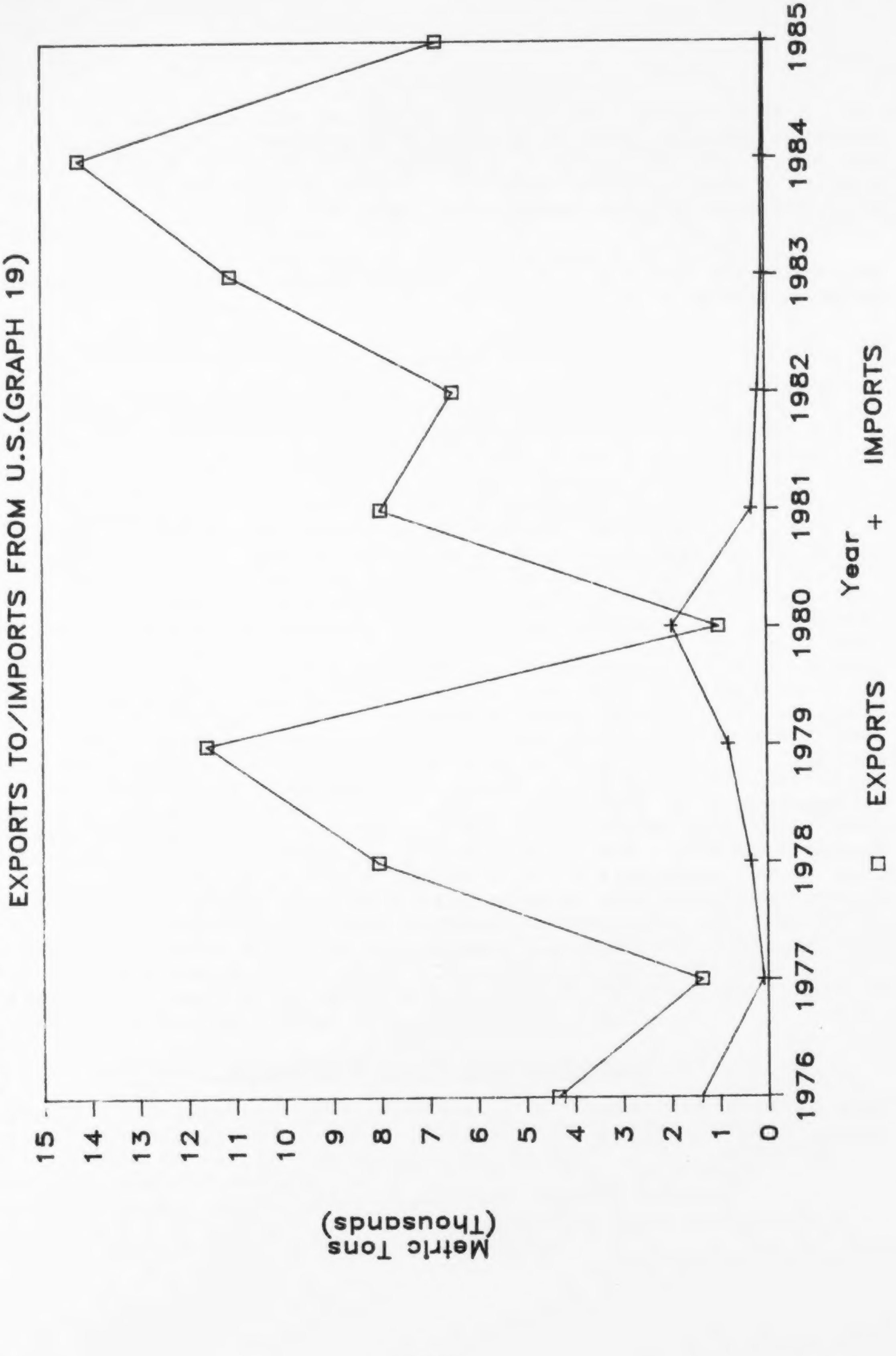
TABLE 29

NORWAY'S ALUMINUM MILL PRODUCT EXPORTS TO AND IMPORTS FROM THE U.S., AND ANNUAL CHANGE, BY PRODUCT, 1976-1985, (Metric Tons)

	ALUMINUM MILL PRODUCTS		ALUMINUM SHEET AND PLATE	
Year	Exports To US	Imports From US	Exports To US	Imports From US
1985	6,800	35	6,800	7
Change	- 52%	- 43%	- 51%	- 71%
1984	14,225	61	13,892	24
Change	- 29%	+ 5%	+ 26%	+ 60%
1983	11,072	58	11,008	15
Change	+ 71%	- 62%	+ 70%	- 81%
1982	6,472	151	6,463	80
Change	- 19%	- 49%	- 19%	- 42%
1981	7,978	293	7,975	137
Change	+ 703%	- 85%	+ 702%	- 93%
1980	994	1,970	994	1,843
Change	- 91%	+305%	- 91%	+409%
1979	11,595	486	11,598	362
Change	+ 44%	+ 42%	+ 44%	+ 42%
1978	8,041	343	8,041	255
Change	+ 490%	+269%	+ 490%	+240%
1977	1,364	93	1,364	75
Change	- 69%	- 93%	- 69%	- 88%
1976	4,354	1,394	4,352	626
Average Yearly Trade And Change				
1976-85	7,290	488	7,248	342
Change	+ 123%	+ 32%	+ 123%	+ 42%

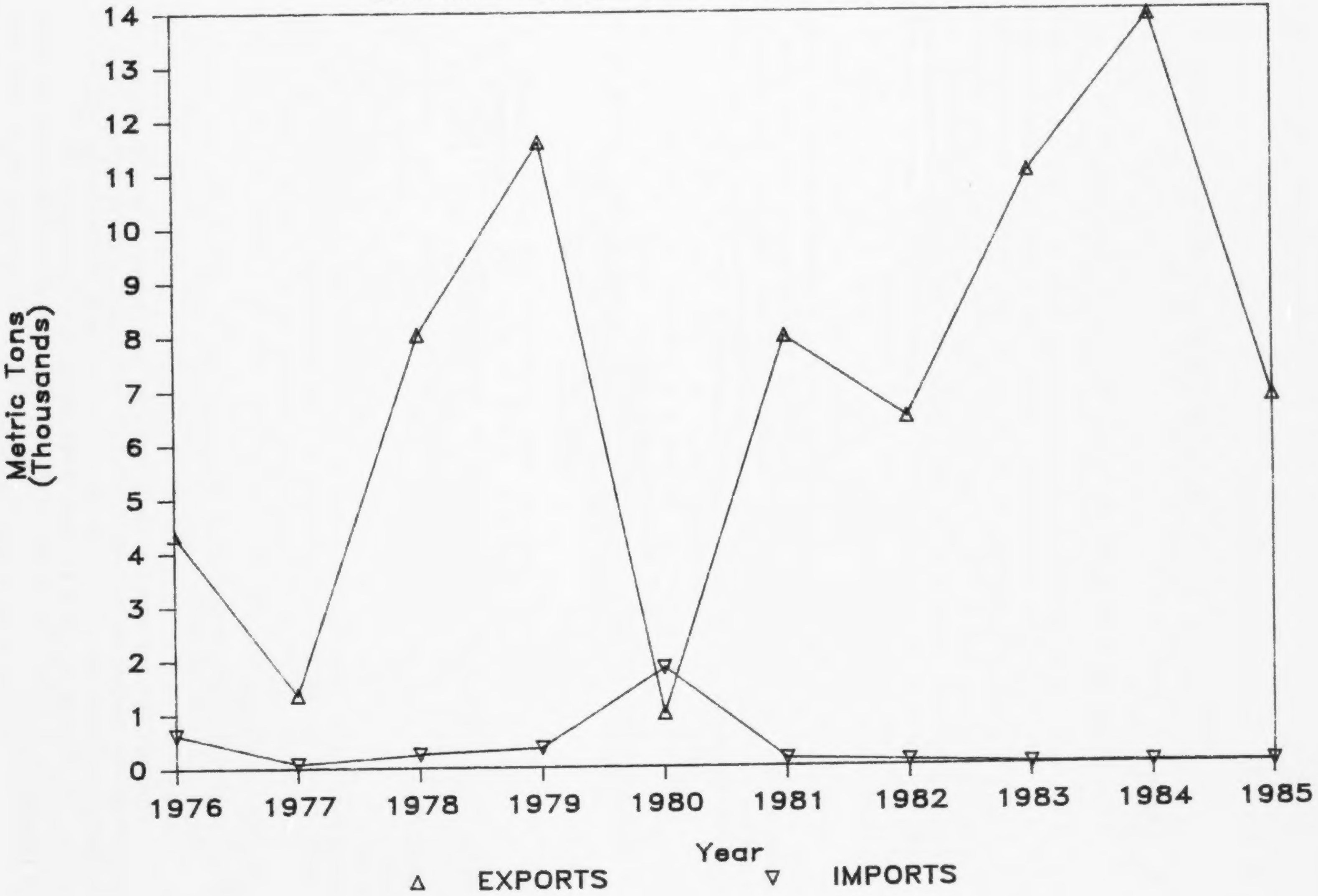
NORWAY'S ALUMINUM MILL PRODUCTS

EXPORTS TO/IMPORTS FROM U.S.(GRAPH 19)



NORWAY'S ALUMINUM SHEET/PLATE

EXPORTS TO/IMPORTS FROM U.S.(GRAPH 20)



IV. EAST ASIA

A. Japan

1. Structure of the Japanese Aluminum Industry

As with most other Japanese industries at the end of World War II, the Japanese aluminum industry was all but destroyed. It slowly regained strength in the postwar years, and by 1965 produced 292,000 MTPY of primary aluminum. During the late 1960s and early 1970s, the Ministry of International Trade and Industry (MITI) pressed the smelters to expand their smelting capacity to 1.6 million MTPY. This target was reached in 1974, and Japan became one of the world's leading primary aluminum producers.

The oil shocks of the 1970s, which significantly increased the cost of electricity for aluminum production, caused the Government of Japan to reconsider its strategy for the aluminum industry. The government's new strategy resulted in the phase out of primary production, as illustrated in table 30.

TABLE 30
JAPANESE PRIMARY ALUMINUM CAPACITY, EXPORTS, IMPORTS, AND TARIFF EXEMPT IMPORTS, 1978-1984,
(000 MT)

Year	Capacity	Exports	Imports	Tariff Exempt Imports
1978	1,640	55	757	1/
1979	1,500	8	677	1/
1980	1,136	7	861	1/
1981	1,136	12	1,061	1/
1982	743	7	1,346	593
1983	712	2	1,378	424
1984	712	2	1,285	424

1/ Not in effect
Source: Japanese Aluminium Federation

The effect of this new strategy has been a substantial increase in imports to satisfy the shortfall in supply of domestic aluminum. This lost capacity has been replaced, in part, by offshore equity smelters such as Asahanin in Indonesia, Albras in Brazil, Bluff in New Zealand, and Venalum in Venezuela.

In order to finance the phaseout of primary aluminum production, a quota system on primary aluminum imports was established. The duty on primary aluminum ingot from nonpreferential rate countries, such as the United States, was reduced from 9 percent to 5.5 percent in 1978 and then to 4.54 percent in 1979. The duty for nations granted preferential rates was lowered from 4.5 percent to 2.75 percent in 1978 and to 2.25 percent in 1979. In return for these changes, importers were "requested" to contribute "cooperation money," an amount equal to the difference between the normal duty rate and the lowered duty rate, minus a flat 0.25 percent handling charge that went directly to the Aluminum Industry Structural Improvement Promotion Association (AISIPA).

In addition, beginning in 1982 and continuing through 1984, Japanese smelters were granted a full rebate of the tariff on primary aluminum ingot that they imported to replace their reduced capacity. The limits to imports which could qualify for the rebate program were set at 383,000 MT in 1982 and 420,000 MT in 1983 and 1984. These rebates applied to all imports of aluminum from either offshore equity (developmental) sources, long-term contracts, or spot purchases. Offshore equity imports were obviously preferred by the smelters, as made evident by the fact that these imports typically accounted for 60 percent of all imports qualifying for the "Tariff Exempt System." In 1984 one-third of all primary aluminum imports came in under this system.

In 1985 the target capacity was revised again to 350,000 MT to be reached by the end of 1988, and the limit for imports under the "Tariff Exempt System" were set at 358,000 MT for 1985 and 1986. The duty rate for primary aluminum was returned to 9 percent, with smelters qualifying under the "Tariff Exempt System" to receive a rebate so that the effective duty rate is 1 percent.

At the end of 1985, only five Japanese smelters remained. Of these five smelters, three are powered by oil, which is a much more expensive source than hydro or coal power. Japan's primary aluminum capacity for 1985 is shown in table 31.

While the Japanese primary aluminum industry is reducing capacity, the aluminum mill product industry is expanding. The largest domestic aluminum mill product producers are Furukawa Aluminium, Sumitomo Light Metal Ltd., Kobe Steel Ltd., and Showa Denko KK. These four combined account for 81 percent of total sheet and plate capacity, 44 percent of aluminum foil capacity, 28 percent of aluminum extrusions capacity and 26 percent of wire and cable capacity. Between 1980 and 1984, production of aluminum mill products increased 15 percent (see table 32). The production of aluminum sheet and plate increased 62 percent during this period, while foil production increased 30 percent.

TABLE 31
JAPAN'S PRIMARY ALUMINUM CAPACITY, BY SMELTER, 1985

Company Plant Location Ownership	Start Up Date	Annual Capacity (000 MT)
1. Mitsui Aluminium Industry Co. Omuta, Miike, Kyushus Island	1970	144
2. Nippon Light Metal Co. Ltd. Kambara Alcan Aluminum Ltd. (50%); Private Interests (50%)	1940	64
3. Ryoka Light Metal Industries Ltd. Sakaide	1972	76
4. Sumitomo Aluminum Smelting Co. Ltd. Toyama Sumitomo Chemical Co. Ltd.	1970	83
5. Showa Light Metal Ltd. Chiba Showa Denko K.K.	1962	59
		Total

426

Source: U.S. Bureau of Mines

TABLE 32
JAPAN'S ALUMINUM MILL PRODUCT PRODUCTION, BY PRODUCT, 1980-1984
(000 MT)

Product	1984	1983	1982	1981	1980
Sheet, plate	786	747	655	582	487
Extrusions	869	905	849	806	830
Foil	111	101	89	93	85
Wire, cable	107	107	105	121	162
Sash	519	546	527	479	525
Total	2,399	2,406	2,225	2,081	2,089

Source: Japan Aluminum Federation.

2. Japanese Aluminum Mill Product Imports

Japanese aluminum mill product imports, while never very high, almost doubled between 1975 and 1984 (from 22,000 MT to 42,000 MT). In 1975 the United States was the largest foreign supplier, accounting for 44 percent (9,600 MT) of all aluminum mill products imports. By 1984, however, the U.S. share decreased to only 5 percent (3,700 MT). The majority of 1984 aluminum mill product imports (63%) came from the Japanese equivalent of GSP countries that paid no duty. The EEC and Australia became the largest nonpreferential rate suppliers (accounting for a combined 67% of all nonpreferential rate imports and 24% of total aluminum mill product imports). Bahrain, Brazil, Romania, Spain, Venezuela and Yugoslavia were the largest preferential rate suppliers, accounting for 78 percent of all preferential rate imports and one-half of total aluminum mill product imports.

Imports of aluminum products are controlled by both high tariff rates and a number of nontariff barriers. These barriers to trade have been instrumental in insulating the internal Japanese market from mill products of foreign competitors and to control the source of supply of aluminum ingot.

a. Tariff Barriers

Japan's tariffs are administered by the Customs Bureau of the Ministry of Finance. Japan adheres to the CCCN classification with most duties levied on an ad valorem basis. As a signator of the GATT, Japan accords most-favored-nation (MFN) tariff treatment to most of its trading partners, including the United States. Since 1971, Japan has granted preferential tariff treatment to suppliers from 110 countries (most of them developing nations) similar to the U.S. GSP. These preferential countries (which accounted for 63% of all aluminum mill product imports in 1984) pay no duty on aluminum mill products.

Japanese tariff rates for aluminum mill products are much higher than those applicable to similar products imported into the United States. By January 1987, the rates for aluminum mill products will range from 5.8 percent for some aluminum pipe to 12.8 percent for aluminum foil. As part of an agreement reached with the Japanese, the tariff for some rolled products will reach parity with the U.S. tariff rate no later than January 1, 1988.

b. Nontariff Barriers

Preferential Loans and Loan Guarantees.--The Japanese Government has given loans to both primary and mill product producers. The primary producers have received government loans at reduced interest rates and loan guarantees to facilitate the restructuring of the aluminum industry. This has helped domestic companies gain investment positions in offshore smelters and has improved the competitive position of Japanese mill product producers both nationally and internationally. Many of the "developmental imports" projects were funded by loans from the Export-Import Bank of Japan. The interest rates from the Export-Import Bank of Japan for these primary aluminum projects is 6.8 percent per annum for yen loans with repayment terms of 1 to 5 years. U.S. Ex-Im Bank loans, by comparison, range from 8.8 to 10.95 percent per annum with repayment terms of 2 to 5 years. In addition to these loans, the Overseas Economic Cooperation Fund (OECF) of MITI provides country-to-country equity and debt financing loans.

As part of their program to promote Japanese production of aluminum mill products, the government has also extended preferential loans to Japanese fabricators to expand capacity. For example, in 1983, the Japanese Development Bank (JDB) loaned Furukawa Aluminum Company 20.8 billion yen at a rate 1 to 1.5 percent below commercial rates for building its Fukui Mill. Furukawa's Fukui Mill, one of the largest and most highly automated rolling mills in the world, has the capacity to satisfy Japan's entire demand for aerospace aluminum materials.

These JDB loans have been extended to 11 major aluminum mill product producers and primary aluminum smelters, with the smelter loans used for capital investment for structural adjustment and the mill product loans going to the rolling industry for construction of new and expanded rolling facilities for the purpose of regional development. These loans, made on a cost-plus basis, consequently rate equal to or slightly less than market rates with interest rates ranging typically between 7.1 and 8.3 percent, compared with prevailing long-term market rates between 7.1 and 8.9 percent.

"Buy Japanese" and Preference for "Developmental Imports".--Japanese smelters have been able to sell high-priced domestic ingot, which is not price competitive, in the domestic marketplace because of "Buy Japanese" policies. At the same time, high Japanese tariffs on aluminum mill products have insulated the market from overseas competition, allowing the Japanese producer to pass on the higher price of the domestic ingot to the consumers. Further, the government has actively encouraged the purchase of offshore Japanese equity ingot through the tariff rebates previously discussed.

Promotion of the Aerospace Industry and its Aluminum Suppliers.--The Japanese Government is actively involved in promoting expansion of the aerospace industry and its suppliers, such as the aluminum industry, through subsidies for major projects. The Aircraft Joint Development Fund, which will be established and funded by MITI in July 1986, will, for example, supply one-half the needed capital for the Boeing 7J7 commercial plane project and subsidized interest on borrowed funds. 1/ For this project, Japan will be a 25 percent risk-taking equity partner along wity Mitsubishi Heavy Industries, Fuji Heavy Industries and the Japanese Aircraft Development Corp.

In promoting the aerospace industry, MITI developed a policy in 1984 to foster the aircraft parts and materials industries. In relation to this policy, the Society of Japanese Aerospace Copmpanies (an association of major aircraft makers and suppliers including aluminum aerospace producers, such as Kobe Steel and Sumitomo Light Metals), prepared a report outlining its recommendations for promoting domestic production of aircraft parts and materials. This plan, dated March 1985, was submitted to MITI and selected industries for acceptance and requested--

a. Financial support from MITI for all aircraft development projects.

b. Government encouragement for "usage of domestic material".

The report indicates that domestic aluminum suppliers (who supplied 40 percent of aircraft aluminum demand in 1984) will be able to displace some foreign supply and satisfy 55 percent of demand in 1986 and 90 percent in the year 2000. 2/

3. Japanese Aluminum Mill Products Exports

The Japanese are net exporters of aluminum mill products by a very large margin. Between 1972 and 1982, aluminum mill product exports increased from 66,000 MT to 166,000 MT, with the share destined for the U.S. going from 23 to 49 percent. By 1984, exports jumped to 242,000 MT, with the U.S. share climbing to 57 percent. While Japan's 1985 export figures have not been released, the portion going to the U.S. increased 8 percent over 1984 to a record high of 149,000 MT.

1/ Japan Economic Journal, August 27, 1985.
2/ Japan Economic Journal, June 20, 1985.

While total exports in 1984 represented 10 percent of total aluminum mill product production, sheet and plate (the largest category produced and exported) exports accounted for almost one-quarter of production, with three-quarters of all exports in this category going to the United States. Aluminum foil exports accounted for one-third of total foil production. Japan has been able to achieve this phenomenal growth in exports as a result of government subsidies to the domestic industry, by protection of the Japanese market from similar imports which U.S. producers could potentially supply, and by taking advantage of the open U.S. market and liberal U.S. trade policies.

The Japanese Government, through MITI, has assisted the aluminum mill products industry through a number of R&D subsidies. The Japanese Government provides conditional R&D loans to the aluminum mill product industry that assist in improving its technological potential. At present, two conditional R&D loans have been made to the aluminum rolling mill industry for programs that center on aluminum powder metallurgy and aluminum-lithium alloys. MITI directed the aluminum mill product industry in 1983 to set up research associations for the aluminum powder metallurgy project. Kobe Steel, Sumitomo Light Metal and Mitsubishi are all participating in this 5-year national project.

In all, subsidies given by MITI's Agency for Industrial Science and Technology for R&D in new industry technologies totalled Y79 million in FY 1983, Y116 million in 1984 and Y106 million in FY 1985 for the powder metallurgy program and Y20 million in FY 1983 and Y13 million in FY 1984 for the aluminum-lithium alloy project. To qualify for these conditional R&D loans, established criteria must be met and the private companies involved must provide matching funds. At the end of these 8-year programs, the Japanese Government will determine if the companies involved have been working in good faith.

While the United States has cost-sharing programs (not loans) where the government and the companies involved share the cost of research, there are important differences separating these programs and the Japanese conditional R&D loans. Under the U.S. program, which in general focuses on basic R&D, any resulting patent belongs to the U.S. Government and may be leased by any interested company (even a Japanese company).

The company that was involved in the research and shared the cost will not have to pay for its lease on the patent. If no patent results from this research, however, both the U.S. Government and the participating company will lose the money invested in the project.

The Japanese conditional R&D loans, on the other hand, focus on commercial projects. If the project goes commercial, the company involved must repay the principal of the loan only. If the research is unsuccessful, however, the companies involved are absolved from repaying any of the loan if they demonstrate that they worked in good faith. Unlike the U.S. program, where any company may participate, the Japanese conditional R&D loan program is limited to those companies that are 100 percent Japanese owned.

Under TSUSA 806.30, Japan is able to purchase aluminum from the United States (usually primary aluminum ingot) and then ship it back to the United States as an advanced product (usually aluminum sheet) and pay a reduced duty on the already low U.S. tariff. The dramatic increase in Japanese aluminum mill products exports to the United States has coincided with an equally dramatic jump in the level of aluminum mill products shipped to the United States under TSUSA 806.30.

Prior to 1978, the Japanese did not take advantage of TSUSA 806.30 and their level of exports to the United States remained fairly low. Since 1978, however, Japanese exports under TSUSA 806.30 have taken an increasingly larger share of total Japanese aluminum mill product exports to the United States, of total TSUSA 806.30 imports from all sources, and of total U.S. aluminum mill product imports. In 1978, Japanese aluminum mill product exports to the United States accounted for one-quarter of all U.S. imports compared with 13 percent in 1977, when TSUSA 806.30 was not utilized. By 1985, however, Japanese exports accounted for one-third of all U.S. aluminum mill product imports. As shown in Table 33, Japan's TSUSA 806.30 exports now account for 82 percent of all U.S. aluminum mill product imports under TSUSA 806.30 and 21 percent of total U.S. aluminum mill product imports. A comparison of Japanese exports to and imports from the United States between 1976 and 1985 and their annual change is shown in table 34 and graph 21.

TABLE 33

JAPAN'S ALUMINUM MILL PRODUCT EXPORTS TO THE U.S. UNDER TSUSA 806.30

(Metric Tons)

Year	Japan's Exports To U.S.	% Of U.S. Imports	Japan's 806.30 Exports To U.S.	% Of Japan's Exports	% Of 806.30 Imports	% Of U.S. Imports
1985	148,707	32%	95,924	65%	82%	21%
1984	137,742	28%	78,935	57%	71%	16%
1983	106,303	38%	51,895	49%	70%	19%
1982	80,868	39%	53,309	66%	76%	26%
1981	20,263	15%	9,434	47%	40%	7%
1980	9,432	12%	1,043	11%	14%	1%
1979	42,733	22%	6,182	14%	35%	3%
1978	57,274	26%	3,485	6%	18%	2%

Source: Aluminum Association

TABLE 34
JAPAN'S ALUMINUM MILL PRODUCT EXPORTS TO AND IMPORTS FROM THE U.S. AND ANNUAL CHANGE, BY PRODUCT, 1976-1985
(Metric Tons)

	ALUMINUM MILL PRODUCTS		ALUMINUM SHEET AND PLATE		ALUMINUM ROD AND BAR	
Year	Exports To US	Imports From US	Exports To US	Imports From US	Exports To US	Imports From US
1985	148,707	4,019	141,564	2,604	701	277
Change	+ 8%	+ 8%	+ 7%	+ 44%	+125%	- 78%
1984	137,742	3,711	132,979	1,806	312	1,268
Change	+ 30H%	- 20%	+ 27%	+ 10%	+ 77%	- 8%
1983	106,303	4,638	104,788	1,645	176	1,374
Change	+ 32%	+ 18%	+ 32%	- 37%	- 59%	+587%
1982	80,868	3,943	79,368	2,598	425	200
Change	+ 299%	- 77%	+ 311%	- 67%	+232%	- 98%
1981	20,263	17,343	19,308	7,818	128	7,932
Change	+ 155%	- 8%	+ 122%	- 15%	- 35%	+ 9%
1980	9,432	18,891	8,960	9,162	196	7,299
Change	- 78%	+ 116%	- 79%	+ 85%	- 44%	+237%
1979	42,733	8,671	41,319	4,962	348	2,169
Change	- 25%	+ 99%	- 26%	+155%	- 39%	+101%
1978	57,274	4,408	55,804	1,950	566	1,080
Change	+ 487%	+ 88%	+ 674%	+ 25%	- 69%	+490%
1977	9,759	2,343	7,209	1,563	1,806	183
Change	- 37%	- 49%	- 41%	- 59%	- 26%	+ 13%
1976	15,525	4,623	12,149	3,820	2,426	162
			Average Yearly Trade And Change			
1976-85	62,861	7,268	60,317	3,793	708	2,194
Change	+ 92%	+ 19%	+ 144%	+ 16%	+ 18%	+139%

TABLE 34--Continued

JAPAN'S ALUMINUM MILL PRODUCT EXPORTS TO AND IMPORTS FROM THE U.S. AND ANNUAL CHANGE, BY PRODUCT, 1976-1985

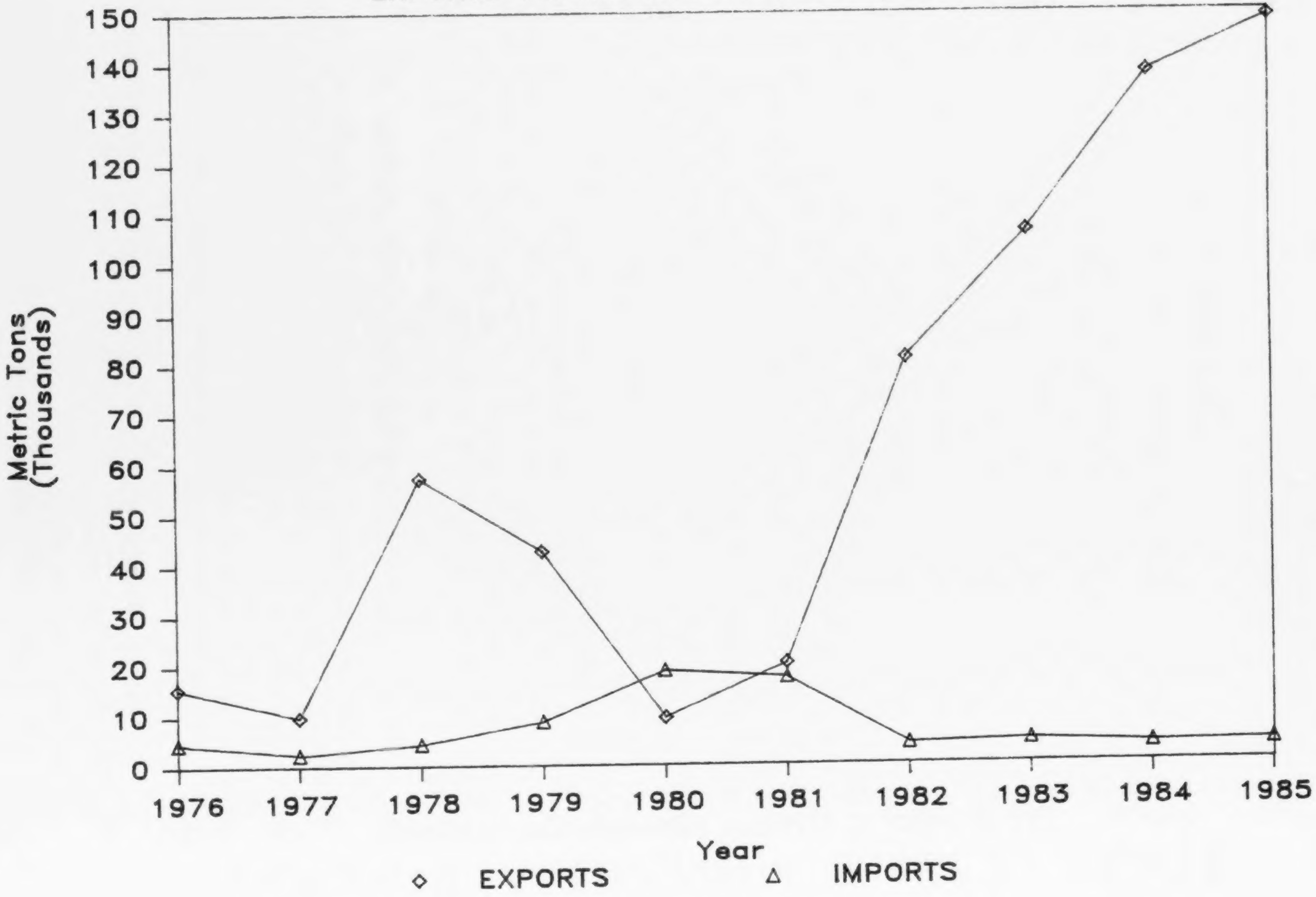
(Metric Tons)

	ALUMINUM FOIL		ALUMINUM WIRE AND CABLE		ALUMINUM PIPE AND TUBE	
Year	Exports To US	Imports From US	Exports To US	Imports From US	Exports To US	Imports From US
1985	4,755	66	260	24	955	44
Change	+ 65%	+ 65%	- 54%	+ 0%	+ 68%	- 47%
1984	2,781	40	568	24	567	83
Change	+915%	- 20%	+105%	- 96%	+ 28%	- 5%
1983	274	50	277	606	442	87
Change	+183%	- 74%	- 35%	+471%	+123%	- 24%
1982	97	191	425	106	198	114
Change	+223%	- 60%	- 41%	- 81%	+247%	+ 21%
1981	30	477	716	548	57	94
Change	- 53%	+ 15%	+ 60%	- 40%	+280%	+ 29%
1980	64	416	447	920	15	73
Change	- 23%	- 29%	- 52%	+115	+ 15%	- 56%
1979	83	588	935	429	13	164
Change	+ 20%	+142%	+ 14%	- 35%	+ 18%	+ 34%
1978	69	243	824	660	11	122
Change	+146%	- 4%	+ 17%	+18H%	- 21%	+107%
1977	28	244	702	34	14	59
Change	- 7%	- 1%	- 13%	+ 89%	- 86%	- 64%
1976	30	246	804	18	103	165
Average Yearly Trade And Change						
1976-85	803	256	596	337	238	101
Change	+163%	+ 4%	+0.2%	+252%	+ 75%	-0.4%

Source: Aluminum Association

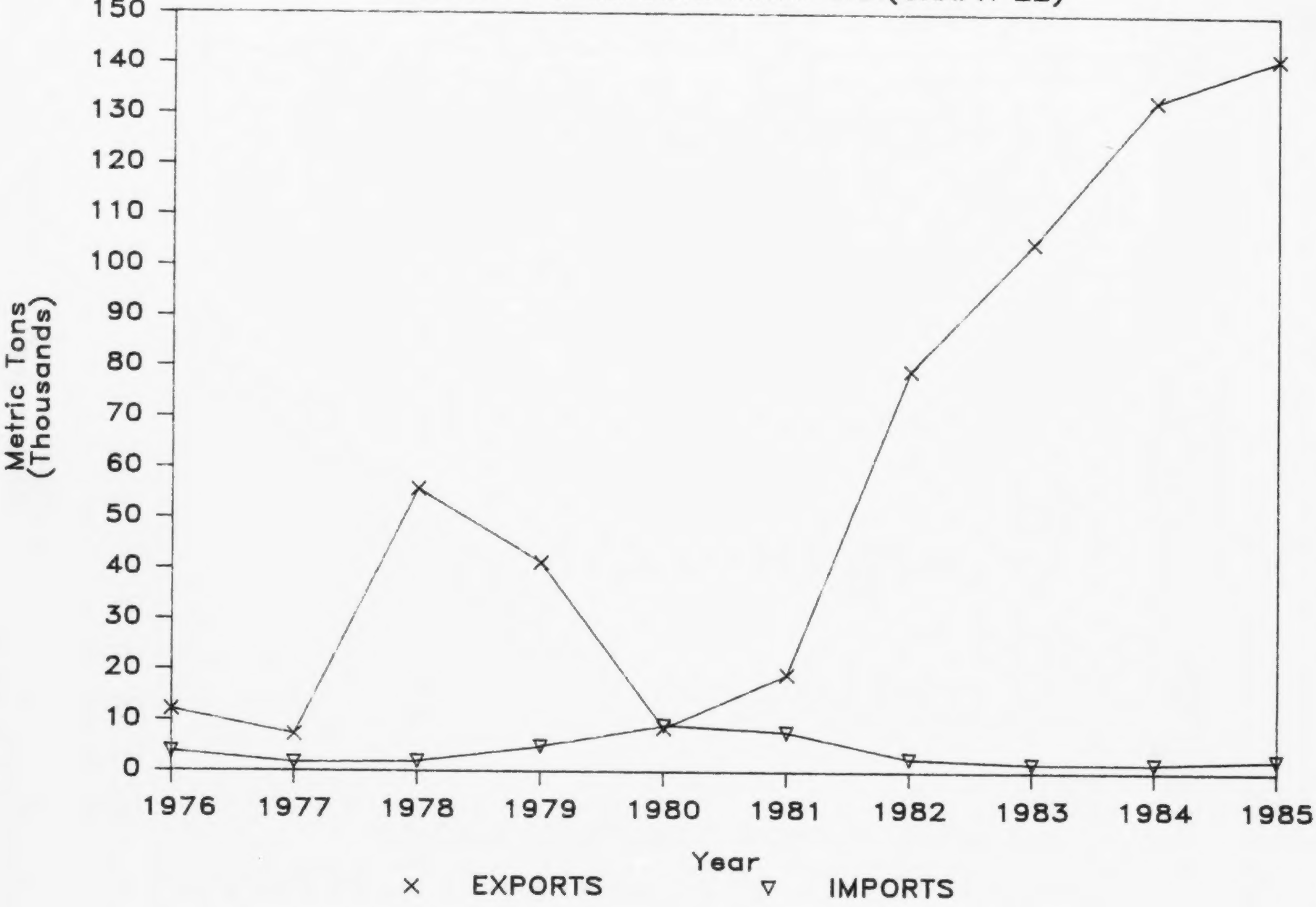
JAPAN'S ALUMINUM MILL PRODUCTS

EXPORTS TO/IMPORTS FROM U.S.(GRAPH 21)



JAPAN'S ALUMINUM SHEET/PLATE

EXPORTS TO/IMPORTS FROM U.S.(GRAPH 22)



B. People's Republic of China (PRC)

1. Structure of the PRC Aluminum Industry

The Chinese Government is targeting aluminum and other nonferrous metals industries for rapid development. China's first smelter, located south of Manchuria in the Liaoning providence, went on stream in 1937. In the 1980s, one new smelter went onstream and four more are either under construction or being planned. The PRC's 1986 primary aluminum capacity is 382,000 MT. If all four of the planned smelters come on stream, capacity will increase to 1.052 million MT.

The PRC operates three major aluminum mill product facilities along with a number of smaller ones. The first plant was established in Harbin, Manchuria, in 1956. In 1985 a new and larger plant was established in Hajin, Shanxi, with Western assistance. In addition, there is a large rolling mill in Chung King that is presently being modernized.

The Chinese have placed great emphasis on expanding aluminum capacity. They are intensely examining closed smelters throughout the world with the hope of bringing them to China for production. Their target is 1.4 million MT of primary aluminum per year by 1990. 1/

In addition, the Chinese have sought to purchase shares in foreign smelters. The state-owned China International Trust and Investment Corp. has purchased 10 percent of Alcoa of Australia's Portland-Victoria smelter, which went onstream in 1986. This purchase represents China's strategy of obtaining aluminum and other nonferrous metals without exhausting the PRC's foreign exchange. 2/

2. PRC Imports of Aluminum Products

In the 1980s, the PRC has placed increased emphasis on foreign trade. This was apparent in 1982 when the Ministry of Foreign Economic Relations and Trade (MOFERT) was created with the aim of consolidating four ministeries and providing greater central leadership in foreign investment and trade practices. The new ministry introduced a number of administrative devices, such as import and export licensing, to strengthen effective control.

1/ Gail W. Brown. "China Expected to Push Projects That Swiftly Earn Them Foreign Exchange". American Metal Market. 22 November 1985.

2/ Paul Charles Ehrlich. "China to Purchase 10% Interest in Australian Aluminum Smelter." American Metal Market. 22 November 1985.

MOFERT placed the sale and purchase of approximately 30 strategic commodities under the central management of China's national foreign trade organizations. Aluminum products were originally placed under the China National Metals and Minerals Import and Export Corporation (MINMETALS). On January 1, 1986, however, the responsibility of imports and exports of aluminum and other nonferrous metals was taken from MINMETALS and given to the China National Nonferrous Metals Imports and Exports Corp. (CNIEC), which was created in 1984. One of CNIEC's tasks under the Seventh (FYP) Five-Year-Plan (1986-1990) will be to carry out sharp cutbacks in imports of nonferrous metals.

Under the Seventh FYP, China plans to double domestic output of aluminum and other nonferrous metals in an attempt to restrict imports and to supply rising domestic demand for metals. This reduction will occur slowly until new smelters and plants come onstream. 1/

Between 1980 and 1984, the PRC's imports of primary aluminum have more than doubled, from 110,000 MT to 253,000 MT. This 1984 level, however, is one quarter lower than the 1975 level of 318,000 MT. Brazil, the United States, Canada, Australia, and Norway are presently the PRC's largest suppliers of primary aluminum. The U.S. share of the PRC primary aluminum import market has decreased from 21 percent in 1975 to 8 percent in 1984. Conversely, Brazil's share was nonexistent in 1982 but moved to 12 percent (or 29,000 MT) in 1984. In the first 6 months of 1985, 46 percent of Brazil's total primary aluminum exports (or 55,000 MT) went to the PRC.

Chinese imports of aluminum mill products increased from 840 MT in 1975 to 13,000 MT in 1980. Between 1980 and 1984, however, the level of imports remained fairly constant. The U.S. share fell from around 30 percent in 1975 to less than one percent in 1980 (mostly foil for cigarette packs and other packaging uses) and has remained negligible. The Japanese share has increased from slightly less than 50 percent in 1975 to around 90 percent in the 1980s.

a. Tariff Barriers

Chinese tariffs are high for all aluminum mill products. The rate is 25 percent for foil, pipe, and tube fittings and 20 percent for all other products. The domestic importer pays all tariff charges, but this policy has little relevance since CNIEC is the only importer authorized to deal with foreign producers.

1/ Paul Charles Ehrlich. "China Names Younger Men to Two Vital Metal, Mineral Posts." American Metals Market. 21 November 1985.

b. Nontariff Barriers

The PRC Government is attempting to create what it calls a "planned commodity economy" in the industrial sector of the economy. Although this should in turn lead to some marketing and privatization of this sector, this has hardly been the case for the aluminum industry and the nonferrous industry as a whole. By forming CNIEC and giving it the status of a ministry, the state's control of the aluminum industry has increased. Some U.S. traders of aluminum have already felt the pinch of the PRC's push to expand the industry and increase exports of aluminum while limiting imports when possible. It will no doubt prove even more difficult in the future to export aluminum to the PRC as the industry expands.

3. PRC Exports of Aluminum Products

While the Chinese Government has committed itself to increasing exports under the Seventh FYP, exports of primary aluminum under the previous FYP decreased dramatically while mill product exports increased only a fraction. Aluminum mill product exports increased 462 percent between 1981 and 1982 and remained constant thereafter. The majority of these exports went to Hong Kong, but the United States received 347 MT in 1984. This marked the first time that the United States had purchased more than 5 MT of aluminum from the PRC in any one year.

Under MINMETALS' control, there was no major push to export aluminum products. Most of the purchasers came to the PRC to place their orders. This arrangement has changed under CNIEC, however. CNIEC has sent delegates abroad and hopes to open offices in New York and London in 1986. CNIEC's ability to successfully operate on a conventional corporate basis has been increased by the fact that its status has become virtually equivalent to that of a ministry and that it is not responsible to either the Ministry of Foreign Trade or the Metallurgical Industry Ministry but reports directly to the Chinese State Council. CNIEC's increased status demonstrates the importance the Chinese government has placed on aluminum products and other nonferrous metals as export earners.

The annual change in the PRC's aluminum mill product exports to and imports from the United States is shown in table 35 and graph 23.

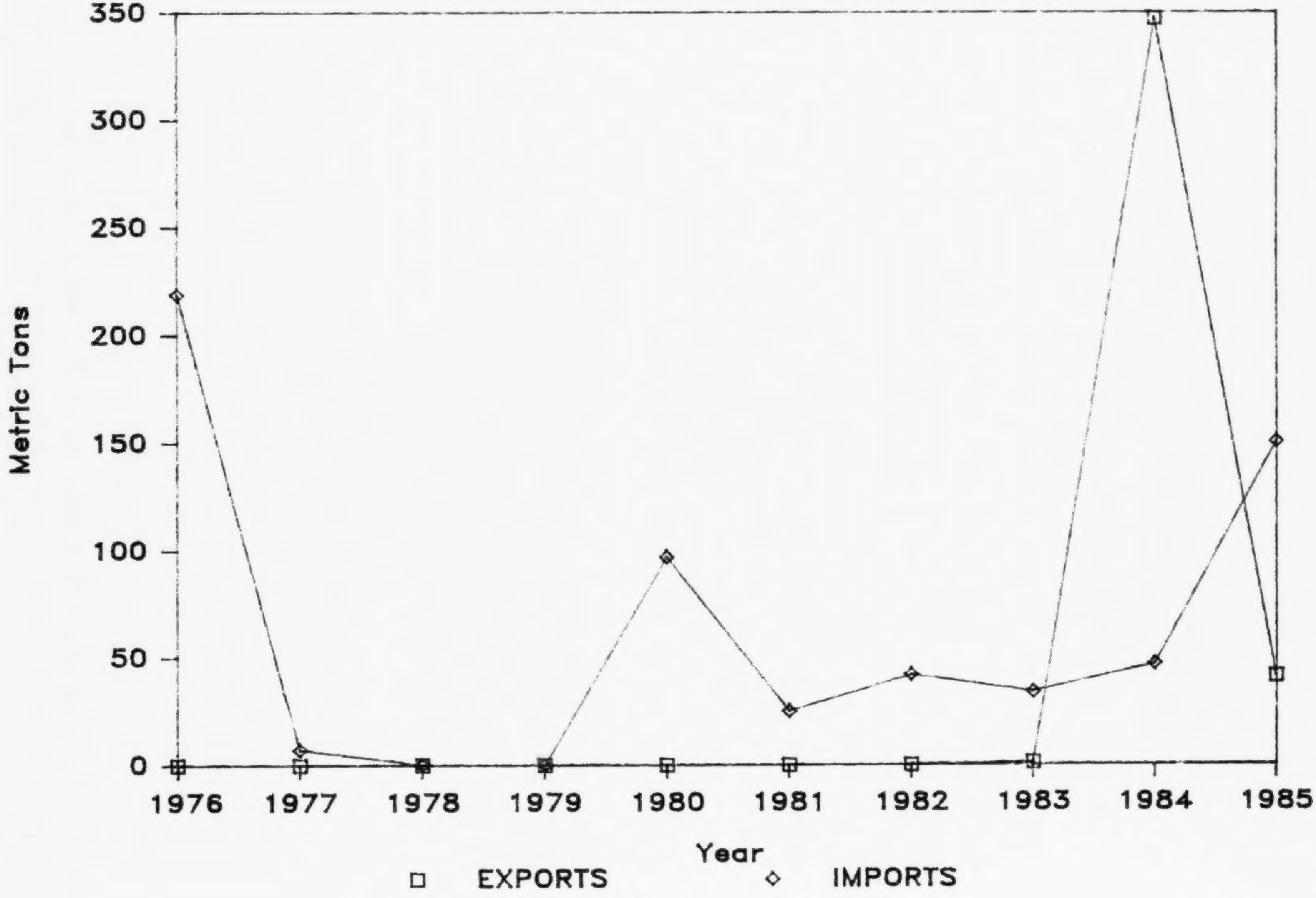
TABLE 35
THE PRC'S ALUMINUM MILL PRODUCTS EXPORTS TO AND IMPORTS FROM THE U.S. AND ANNUAL CHANGE, BY PRODUCT, 1976-1985, (METRIC TONS)

	ALUMINUM MILL PRODUCTS		ALUMINUM SHEET AND PLATE		ALUMINUM FOIL	
Year	Exports To US	Imports From US	Exports To US	Imports From US	Exports To US	Imports From US
1985	41	150	19	45	20	0
Change	- 88%	+219%	- 88%	+ 45%	- 92%	+ 0%
1984	347	47	109	31	238	0
Change	+34H%	+ 38%	+10H%	+ 41%	+ 0%	+ 0%
1983	1	34	1	22	0	0
Change	+ 0%	- 19%	+ 0%	+ 16%	+ 0%	-100%
1982	0	42	0	19	0	10
Change	+ 0%	+ 68%	+ 0%	- 5%	+ 0%	+ 0%
1981	0	25	0	20	0	0
Change	+ 0%	- 74%	+ 0%	- 73%	+ 0%	+ 0%
1980	0	97	0	73	0	0
Change	+ 0%	+ 0%	+ 0%	+ 0%	+ 0%	+ 0%
1979	0	0	0	0	0	0
Change	+ 0%	+ 0%	+ 0%	+ 0%	+ 0%	+ 0%
1978	0	0	0	0	0	0
Change	+ 0%	-100%	+ 0%	-100%	+ 0%	+ 0%
1977	0	7	0	7	0	0
Change	+ 0%	+ 7%	+ 0%	+ 7%	+ 0%	+ 0%
1976	9	2,381	5	379	0	957
Average Yearly Trade And Change						
1976-85	39	62	13	29	26	1
Change	+34H%	+ 4%	+12H%	- 19%	- 10%	- 11%

Source: Aluminum Association

PRC'S ALUMINUM MILL PRODUCTS

EXPORTS TO/IMPORTS FROM U.S.(GRAPH 23)



V.OCEANIA

A. Australia

1. Structure of the Australian Aluminum Industry

Since the early 1960s, Australia's importance as both a supplier of bauxite and alumina and as a producer of primary aluminum and aluminum mill products has increased dramatically. In addition, the potential exists for Australia to play an even more important role in aluminum production as a result of its abundant raw materials, cheap electricity (based on coal reserves), a well-developed infrastructure, and its proximity to the Asian and Japanese markets.

Production of primary aluminum has increased at a very rapid rate since 1980, while consumption has increased at a much slower pace. In 1980, domestic consumption of primary aluminum stood at 83 percent of production, while in 1984 it was only 35 percent. In the first half of 1985, all smelters were operating either at or above capacity, and only 28 percent of production was consumed domestically. Combined 1986 capacity for Australia's six smelters is 1.0 million MTPY, increasing to 1.3 million MTPY in 1988.

Like the primary aluminum industry, the Australian aluminum mill product industry has expanded production in the 1980s, but the pace has been somewhat slower. A few of the major aluminum mill product producers established their operations at the turn of the century, while the others were established in the 1950s and 1960s. Between 1980 and 1984, the level of mill product production increased 11 percent. This increase is shown in table 36.

TABLE 36
AUSTRALIAN ALUMINUM MILL PRODUCT
PRODUCTION, BY PRODUCT, 1980-1984
(000 MT)

Product	1984	1983	1982	1981	1980
Sheet, plate	155	142	120	134	126
Rods, bars	63	57	59	69	63
Foil	13	13	12	7	13
Wire, cable	23	19	21	25	22
Tubes	-	0	2	4	5
Total	255	231	214	239	229

Source: Commonwealth Bureau of Census and Statistics

Alcan Australia Ltd. (owned 70% by Alcan), Alcoa of Australia Ltd. (owned 51% by Alcoa) and Comalco Ltd. are the three largest producers of aluminum mill products jointly accounting for 87 percent of aluminum sheet and plate capacity, all aluminum foil capacity and 61 percent of aluminum extrusions capacity. BICC Ltd. (U.K.), Olex Corp., and Tomago Aluminium Ltd. (owned by Grove Aluminium Ltd., Pechiney and VAW) are the only producers of aluminum wire and cable.

2. Australian Imports of Aluminum Products

Prior to 1973, Australia was a net exporter of aluminum mill products. They lost this position between 1973 and 1977, but regained it in 1978. Aluminum mill product imports rose to 11,000 MT in 1984. The United States has traditionally been the largest foreign supplier to the Australian market. Throughout most of the 1970s, the United States supplied about half of all Australia's mill product imports. Its share dropped to 14 percent in 1984. The Japanese have now assumed the position of Australia's major aluminum mill product supplier. Australia received 95 percent of Oceania's total aluminum mill product imports from the United States in 1985. These imports are shown in table 37 and graph 24.

a. Tariff Barriers

Australia has both a general tariff and a preferential tariff. The preferential tariff applies to certain imports from Canada, New Zealand, Papua New Guinea and the less developed countries. The duties charged to those countries falling in the general column, such as the United States, are high by world standards. The general duty for aluminum mill products is 20 percent for foil and pipe and tube fittings and 15 percent for all other products.

b. Nontariff Barriers

The Australian Government maintains a "buy Australian" policy which has served to keep some foreign aluminum products out of the country. The U.S. Department of Commerce is aware that one U.S. exporter lost a bid to sell extruded and drawn bar to the Australian Government even though the price they quoted was lower than all others. An Australian company was given preference in this sale despite its higher bid.

In general, the government will show preference to an Australian good that is no more than 20 percent above the price of the foreign made good. For any government aluminum purchase over A$1 million, the product must have a minimum of 30 percent local content within a 3 to 5-year period.

3. Australian Export of Aluminum Products

When Australia regained its position as a net exporter of aluminum mill products in 1978, total exports (5,000 MT) were slightly below the 1974 level. By 1984, exports had increased to 64,000 MT. The U.S. share of total exports rose from 17 percent in 1978 to 40 percent in 1984. Australia accounted for 99.9 percent of Oceania's aluminum mill product exports to the U.S. in 1985. These exports are shown in table 37 and in graph 24.

TABLE 37
OCEANIA'S ALUMINUM MILL PRODUCT EXPORTS TO AND IMPORTS FROM THE U.S. AND ANNUAL CHANGE, BY PRODUCT, 1976-1985,
(Metric Tons)

	ALUMINUM MILL PRODUCTS		ALUMINUM SHEET AND PLATE		ALUMINUM ROD AND BAR	
Year	Exports To US	Imports From US	Exports To US	Imports From US	Exports To US	Imports From US
1985	15,402	1,202	15,398	358	0	375
Change	- 41%	- 43%	- 41%	- 12%	+0%	- 64%
1984	25,928	2,120	25,924	408	0	1,038
Change	+ 62%	+ 2%	+ 62%	- 1%	+0%	+ 36%
1983	16,042	2,072	15,936	413	0	764
Change	+ 15%	- 28%	+ 14%	+ 9%	+0%	- 42%
1982	13,969	2,874	13,943	380	0	1,309
Change	- 10%	- 5%	- 10%	- 52%	+0%	- 6%
1981	15,536	3,027	15,536	789	0	1,232
Change	+ 40%	+ 14%	+ 40%	+ 2%	+0%	+ 58%
1980	11,109	2,649	11,097	775	0	778
Change	+ 76%	- 1%	+ 83%	- 6%	+0%	- 8%
1979	6,302	2,672	6,072	822	0	848
Change	+ 676%	+ 13%	+ 654%	+ 18%	+0%	+ 1%
1978	812	2,357	804	697	0	841
Change	+ 39H%	- 16%	+ 39H%	- 13%	+0%	+ 24%
1977	20	2,797	20	802	0	1,110
Change	+ 122%	+ 21%	+ 300%	+112%	+0%	+ 16%
1976	9	2,381	5	379	0	957
	Average Yearly Trade And Change					
1976-85	10,511	2,409	10,474	582	0	925
Change	+ 545%	- 5%	+ 559%	+ 6%	+0%	- 2%

TABLE 37--Continued

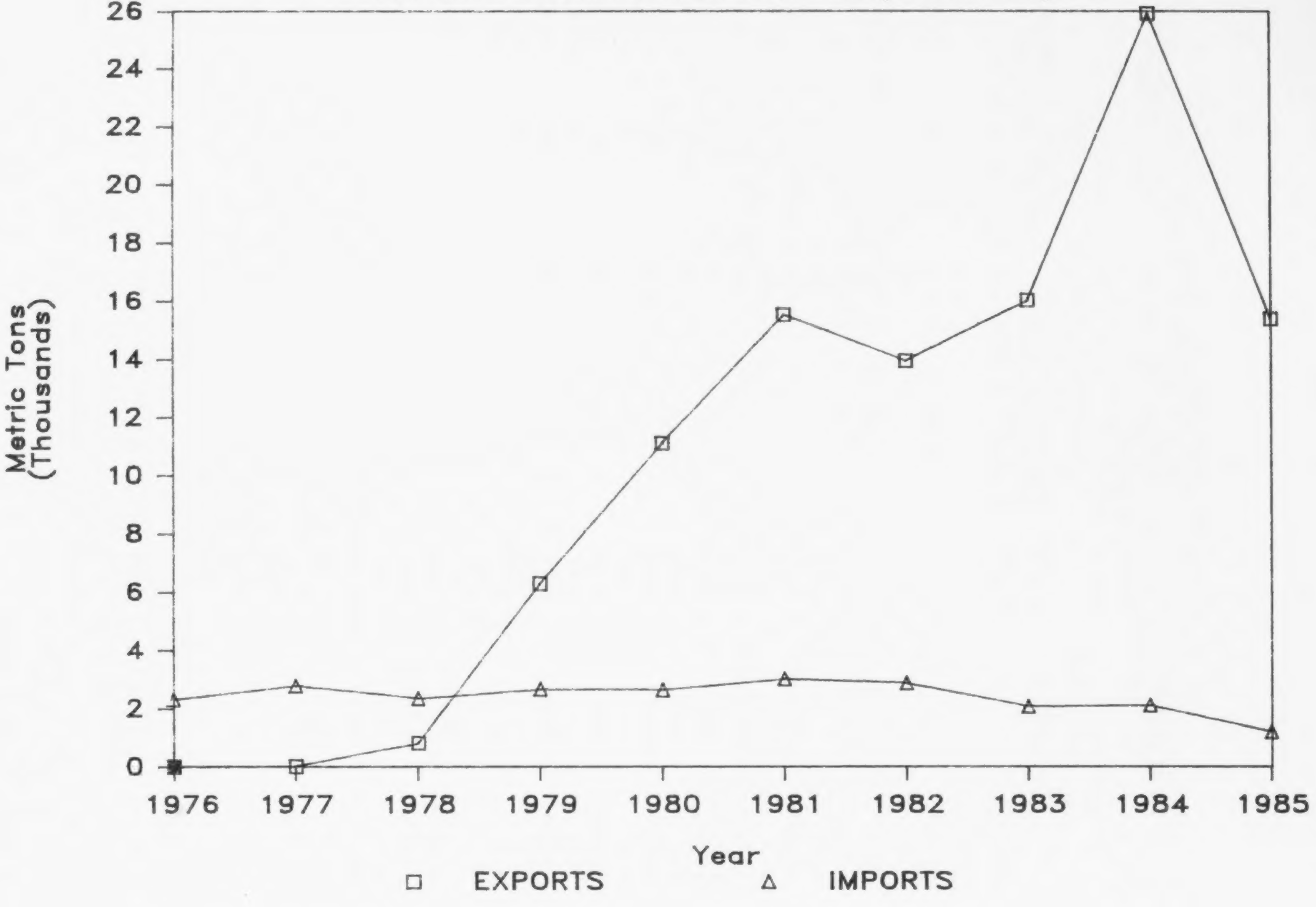
OCEANIA'S ALUMINUM MILL PRODUCT EXPORTS TO AND IMPORTS FROM THE U.S. AND ANNUAL CHANGE, BY PRODUCT, 1976-1985, (Metric Tons)

	ALUMINUM FOIL		ALUMINUM WIRE AND CABLE		ALUMINUM PIPE AND TUBE	
Year	Exports To US	Imports From US	Exports To US	Imports From US	Exports To US	Imports From US
1985	0	29	0	118	2	183
Change	-100%	- 17%	-100%	+146%	+100%	+108%
1984	1	35	2	48	1	88
Change	- 75%	- 84%	- 98%	+ 20%	+ 0%	- 19%
1983	4	212	102	40	1	109
Change	+ 33%	+ 32%	+ 0%	- 52%	- 50%	- 7%
1982	3	161	0	83	2	117
Change	+ 0%	+ 18%	+ 0%	- 85%	+ 0%	- 31%
1981	0	137	0	565	0	170
Change	-100%	- 3%	-100%	+ 3%	+ 0%	+240%
1980	3	141	7	549	0	50
Change	- 99%	+ 31%	- 72%	- 13%	-100%	- 28%
1979	203	108	25	630	1	39
Change	+28H%	- 66%	+24H%	+180%	+ 0%	- 19%
1978	7	315	1	255	0	48
Change	+ 0%	- 3%	+ 0%	+543%	+0%	+ 60%
1977	0	323	0	35	0	30
Change	-100%	- 71%	+ 0%	- 30%	+ 0%	+ 43%
1976	2	1,124	0	50	0	21
Average Yearly Trade And Change						
1976-85	22	259	14	234	1	86
Change	+262%	- 18%	+226%	+ 79%	- 6%	+ 45%

Source: Aluminum Association

OCEANIA'S ALUMINUM MILL PRODUCTS

EXPORTS TO/IMPORTS FROM U.S.(GRAPH 24)



B. New Zealand

1. Structure of the New Zealand Aluminum Industry

New Zealand's aluminum industry has been in existence since 1904, when Alcan established a rolling mill in Auckland. By 1951, there were four producers of aluminum mill products. New Zealand's only smelter went on stream in 1971. New Zealand's primary aluminum capacity in 1986 is 244,000 MT.

Alcan is the only producer of aluminum sheet, plate and foil, while McKechnie Group (U.K.) accounts for one-half of aluminum extrusions capacity. New Zealand Aluminium Smelters accounts for three-quarters of aluminum wire and cable capacity.

2. New Zealand Imports of Aluminum Products

Prior to 1978 New Zealand was a net importer of aluminum mill products. Between 1978 and 1984, imports increased from 3,000 MT to 4,000 MT. In 1984, 57 percent of aluminum mill product imports came from Australia, 21 percent from Japan and 17 percent from the EEC. Aluminum mill product imports from the United States are shown in table 37 and graph 24.

a. Tariff Barriers

Since July 1978, customs tariffs have been based on the CCCN. In the New Zealand Tariff schedule, rates of duty are shown in two columns titled "Preferential Tariff," listing lower rates for Australia, Canada, Malaysia, and developing countries; and "Normal Tariff," applicable to imports from all other countries, including the United States. In 1984, New Zealand and Australia enacted the Closer Economic Relationship (CER), which replaced the New Zealand-Australia Free Trade Agreement of 1966. The CER calls for the progressive elimination of tariffs on many goods traded between the two countries. All aluminum products are included under the CER.

"Normal Tariff" rates for aluminum are very high compared with those of other industrialized countries. These rates range from 30 percent for aluminum foil to 35 percent for all other products.

b. Nontariff Barriers

Most import licenses (called "basic" licenses) are issued to importers according to a percentage allocation, which varies by commodity groupings, based either on the amount of their previous period's licenses or on the amount of actual goods imported during the previous period. In general, where allocations are based on the licenses issued for a previous period, basic licenses are automatically issued. Where the allocation is based on actual imports, however, specific applications are required and the license is approved on a global quota system. Aluminum rod, bar, pipes, tubes and fittings as well as a number of fabricated aluminum products are allocated on this basis.

The government also has a system of export incentives to encourage the export of goods manufactured in New Zealand. This plan provides for the issuance of additional import licenses to manufacturers for raw materials and components used in manufacture for export. These licenses must be approved by the Minister of Trade. Aluminum plate and foil require this additional license.

3. New Zealand Exports of Aluminum Products

Aluminum mill products were not exported from New Zealand until 1971. Between 1971 and 1984, exports increased from 91 MT to 6,000 MT. In 1984, 57 percent of aluminum mill product exports went to Australia, 24 percent to Indonesia, and only 2 percent to Japan.

APPENDIX A

DESCRIPTIONS AND USES OF ALUMINUM PRODUCTS

Unwrought aluminum is generally marketed in the form of ingot, although other forms such as slabs are available. Unwrought aluminum is used principally as a raw material in the manufacture of castings and such wrought products as sheet, plate, bar, rod, wire, pipe, tube, and extruded shapes. Wrought aluminum products are made primarily by rolling, extruding, drawing, roll-forming, forging and welding. These products can be made from both alloyed and unalloyed aluminum.

Sheet, plate, and strip are rolled products which account for the majority of domestic consumption of wrought aluminum articles. Sheet and strip are primarily used in building and construction and in some electrical applications. Plate is used extensively in the manufacture of ships, aircraft, military vehicles, railroad cars, and tanks.

Aluminum foil is a flat-rolled product not over 0.006 inch in thickness, and produced from coiled aluminum sheet. It is marketed in various forms (not backed or cut to shape, cut to shape but not backed, and backed, whether or not cut to shape, covered, or decorated with characters, designs, or patterns). Another foil product, aluminum in leaf, is a very thin sheet or plate of aluminum. Most of the aluminum foil consumed domestically is used in electrical, heat transfer, and building and construction applications.

Rods and bars are solid products made by rolling or extruding. They are often used as forging stock or screw machine stock. Rod is commonly drawn into wire.

Seamless tubes and blanks are usually extruded to size. If close dimensional tolerances are required, the extruded tube may be drawn. Roll-formed or welded tube is produced from sheet stock. Aluminum pipes and tubes are used in irrigation systems, lawn furniture, hand railings, and electrical conduits.

Angles, shapes, and sections are solid products produced by either extruding or roll-forming flat sheet or strip into a desired shape. These products are usually architectural and structural shapes used in window and screen frames, truck-trailer flooring, aircraft wings, and automobile grills and bumpers.

Aluminum powder is a fine, granular material produced by disintegrating a stream of molten metal with a blast or stream of air. The powder is used in pyrotechnics and the manufacture of aluminum flakes, which are in turn used in the production of paint.